



# C.V. METAL CORPORATION

Specialist : In Sheets, Plate's, Coils and Project Materials.





# C.V. METAL CORPORATION

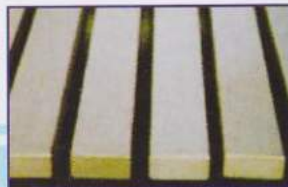
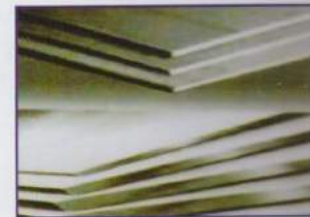
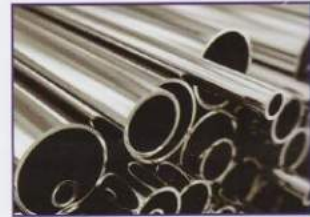
Off.: 022-6639 4259 Tel.: 022-2389 1800/6659 5329 Fax : 022-2387 0961 Mob.: 9833255583/9869532546 E-mail : cvsant42@gmail.com/ info@cvmetal.com

## BUSINESS FORMULA

COMPETITIVE PRICE + SPECIFIED MATERIAL + TIME BOUND DELIVERY = INCREASING BUSINESS

## FORMULAE

- 1) WEIGHT OF STAINLESS STEEL PIPES & TUBES**  
 $OD (mm) - W.T.(mm) \times W.T. (mm) \times 0.02466 = \text{Kg.per Mtr.}$
- 2) SHEET WIDTH REQUIRED FOR ROLLED AND WELDED PIPES**  
 $O.D.(mm) - THK (mm) \times 3.14 = \text{Sheet Width}$
- 3) WEIGHT OF STAINLESS STEEL SHEETS**  
 $\text{Length (mtr)} \times \text{Width (mtr)} \times \text{Thk (mm.)} \times 8 = \text{Kg Per Sheet}$
- 4) WEIGHT OF STAINLESS STEEL CIRCLE & BLANKS**  
 $O.D.(mm) \times O.D > (mm) \times \text{Thk (mm)} / 160/1000 = \text{kg Per Pcs.}$
- 5) WEIGHT OF STAINLESS STEEL ROUNDS**  
 $\text{Dia. (mm)} \times \text{Dia (mm)} \times 0.00623 = \text{Per Mtr.}$
- 6) WEIGHT OF STAINLESS STEEL HEXAGONAL RODS**  
 $\text{Dia. (mm)} \times \text{Dia (mm)} \times 0.00679 = \text{Per Mtr.}$
- 7) WEIGHT OF STAINLESS STEEL SQUARE BARS**  
 $\text{Dia. (mm)} \times \text{Dia (mm)} \times 0.00787 = \text{Kg Per Mtr.}$
- 8) WEIGHT OF CARBON STEEL PIPES & TUBES**  
 $O.D. (mm) - W.T. (mm) \times W. T. (mm) \times 0.02466 = \text{Kg Per Mtr.}$
- 9) WEIGHT OF CARBON STEEL SHEETS - PLATES**  
 $\text{Length (mtr.)} \times \text{Width (mtr)} \times \text{Thk (mm)} \times 7.85 = \text{Kg Per Sheet}$
- 10) WEIGHT OF COPPER PIPES**  
 $O.D. (mm) - W.T. (mm) \times W. T. (mm) \times 0.0256 = \text{Kg Per Mtr.}$
- 11) WEIGHT OF LEAD PIPES (appro.)**  
 $O.D. (mm) - W.T. (mm) \times W. T. (mm) \times 0.0345 = \text{Kg Per Mtr.}$
- 12) WEIGHT OF LEAD SHEETS (appro.)**  
 $\text{Length (mtr.)} \times \text{Width (mtr)} \times \text{Thk (mm)} \times 11.2 = \text{Kg Per Sheet}$
- 13) WEIGHT OF ALLUMINUM PIPES (appro.)**  
 $O.D. (mm) - W.T. (mm) \times W. T. (mm) \times 0.0082 = \text{Kg Per Mtr.}$
- 14) WEIGHT OF ALLUMINUM SHEETS (appro.)**  
 $\text{Length (mtr.)} \times \text{Width (mtr)} \times \text{Thk (mm)} \times 2.66 = \text{Kg Per Sheet}$



WEBSITE : [www.cvmetal.com](http://www.cvmetal.com)



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## COMPNY PROFILE

COMPANY NAME	: <b>M/s. C.V.METAL CORPORATION</b>
REGD. OFFICE (Address)	: 111/125, Patel Mension (4th Kumbharwada), Prabhu Shri Ram Mandir Marg, Near Gol Dewal Mandir, Mumbai - 400 004.
CONTACT PERSON	: <b>Mr. O.C. SANT</b> <b>Mr. C.V. SANT</b>
TELEPHONE	: 022-6639 4259/ 22-6659 5329/ 022-2389 1800
MOBILE	: +91- 09833255583 (O.C.SANT) 09869532546 (C.V.SANT)
STATUS OF FIRM	: Propreitorship
DATE OF ESTABLISHMENT	: 11/07/1996
E-MAIL	: info@cvmetal.com cvsant42@gmail.com
WEBSITE	: <b>www.cvmetal.com</b>
C.S.T. NO. VAT TIN NO.	: 27260356086 C w.e.f. 1-04-2006 27260356086 V w.e.f. 1-04-2006
PAN NO.	: ABGPS6284F
BANK NAME & A/C NO.	: BANK OF BARODA - C.P. Tank Branch A/C No. 03900200000967 IFSC Code = BARBOCPTANK
ITEM IMPORADTED/ STOCKED	: As Per Our Stock Trade List
TESTING FACILTY	: At Outside Govt. Approved LAB
INSPECTION	: Any TPI AGENCY



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## INTRODUCTION

Dear Valued Customer !

**C.V. METAL CORPORATION** under the dynamic leadership of **Mr. C.V.Sant & O.C. Sant** proudly itself as one of the leading & largest stockists & suppliers of all kind of ferrous & Non- Ferrous Metal Items.

Manufactures, Suppliers, Exporters & Importers of Stainless Steel, C.S. Pipe Fitting and Flanges, CNC Components, Dairy & Pharma Fittings, Valves, Clamps, Unions, Industrial Raw Materials, Pipes, Sheets, Plates, Round Bars, Square Bars in all Size and Grades.

More and above, we have 25 years experience in this and crossed a substantial business on repeat order basis, from our reputed clients.

We are the regular suppliers to various Mfg. Units of Pharmaceuticals, Chemicals, Fertilizers, Cement, Paper, Water Purifiers, Textiles & Sugar etc.

Our greetings to our valued customers and the users of this Catlog and thanks for their continued patronage.

For our Customer's benefit competitive pricing, assured 100% satisfactions and prompt supply. We assure you our best and prompt dedicated services and look forward to building up a long business relation



### **OUR FORMULA FOR GOOD BUSINESS**

- ❖ Quality of Goods
- ❖ Quick Service
- ❖ Honesty





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## SUMMARY OF THE ASTM STANDARD GENERALLY USED FOR SHEETS / PLATES

ASTM	Grade	Chemical requirements percent (%)											Mechanical requirements					
		C max	Mn max	P max	S max	Si max	Ni	Cr.	Mo	Cu	Others	Tensile strength mini - Mpa	Yield strength mini - Mpa	Elong mini %	Brinell	Hardness Rockwell		
A240	304	0.08	2.00	0.045	0.030	0.75	8.00-10.5	18.00-20.0					515	205	40	201	92	
	304L	0.03	2.00	0.045	0.030	0.75	8.00-12.0	18.00-20.0					485	170	40	201	92	
	310	0.08	2.00	0.045	0.030	0.75	19.0-22.0	24.0-26.0					515	205	40	217	95	
	316	0.08	2.00	0.045	0.030	0.75	10.0-14.0	16.0-18.0	2.00-3.00				515	205	40	217	95	
	316L	0.03	2.00	0.045	0.030	0.75	10.0-14.0	16.0-18.0	2.00-3.00				485	170	40	217	95	
	317L	0.03	2.00	0.045	0.030	0.75	11.0-15.0	18.0-20.0	3.00-4.00				515	205	40	217	95	
	321	0.08	2.00	0.045	0.030	0.75	9.00-12.0	17.0-19.0			TP-Si-C<0.70		515	205	40	217	95	
347	0.08	2.00	0.045	0.030	0.75	9.00-13.0	17.0-19.0			Cb+Ta+Tb<0.10		515	205	40	217	95		
A 387 Class 1 Class 2	2	0.05-0.21	0.55-0.80	0.035	0.040	0.15-0.40		0.50-0.80	0.45-0.60				Class 1	Class 2	Class 2			
	5	0.15	0.30-0.60	0.04	0.030	0.050		4.00-6.00	0.45-0.65				380	486	230	310	22	
	7	0.15	0.30-0.60	0.030	0.030	1.00		6.00-8.00	0.45-0.65				415	515	205	310	18	
	9	0.15	0.30-0.60	0.035	0.030	1.00		8.00-10.0	0.90-1.10				415	515	205	310	18	
	11	0.04-0.17	0.40-0.65	0.035	0.04	0.50-0.80		1.00-1.50	0.45-0.65				415	515	205	310	18	
	12	0.04-0.17	0.40-0.65	0.035	0.04	0.15-0.40		0.80-1.15	0.45-0.60				380	515	240	310	22	
	21	0.04-0.17	0.30-0.60	0.035	0.035	0.50		2.75-3.25	0.90-1.10				415	515	205	310	18	
	22	0.05-0.17	0.30-0.60	0.035	0.035	0.50		2.00-2.50	0.90-1.10				415	515	205	310	18	
	55	0.22	0.90	0.035	0.04	0.15-0.40							380 - 515	205	27			
	60	0.27	0.90	0.035	0.04	0.15-0.40							415 - 550	220	25			
	65	0.31	0.90	0.035	0.04	0.15-0.40							450 - 585	240	23			
A 515	70	0.33	1.20	0.035	0.04	0.15-0.40						585 - 620	260	21				
	55	0.20	0.60-1.20	0.035	0.04	0.15-0.40						380 - 515	205	27				
	60	0.23	0.85-1.20	0.035	0.04	0.15-0.40						415 - 550	202	25				
	65	0.26	0.85-1.20	0.035	0.04	0.15-0.40						450-585	240	23				
	70	0.28	0.85-1.20	0.035	0.04	0.15-0.40						485 - 620	260	21				
A 537	Class 1	0.24	0.70-1.35	0.035	0.040	0.15-0.40		0.80max	0.35max				485 - 620	345	22			
	Class 2	0.24	0.70-1.35	0.035	0.040	0.15-0.40		0.25max	0.35max				550 - 690	415	22			

## IS- 2002-60 STEEL PLATES FOR BOILERS

## IS- 2002-92 STEEL FOR GENERAL STRUCTURAL PURPOSES

Grade	Designation	% Chemical Composition				Yield Strength (Min) Mpa		Tensile strength (Min) (kg/mm <sup>2</sup> )	Bend Test	Sic test V Notch impact Energy Joule min	Tensile Test			Elongation		
		C max	MN max	S max	P max	SI (C.E) max	SI (C.E) max				SI (C.E) max	Tensile strength Mpa	Yield strength Mpa	% min	Test Place	
A	FE410 WA	0.23	1.5	0.050	0.050	-	0.42	41.8	250	240	230	23	3t	-		
B	FE410 WB	0.22	1.5	0.045	0.045	0.40	0.41	41.8	250	260	230	23	t<25mm	21 for t> 25mm		
C	FE410 WC	0.20	1.5	0.040	0.040	0.40	0.36	41.8	250	260	230	23	2t	27		

**Formula - Weight of Stainless Steel/Plates = Length (mm) x Width (mm) x Thickness (mm) x 7.86 = Kg./Sheet.**



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ASTM		SUMMARY OF THE MAIN ASTM STANDARDS GENERALLY USED PIPING													Mechanical requirements			
		Grade	Chemical requirement percent (%)											Tensile Strength mini-Mpa	Yield Strength mini-Mpa	Elong mini %	Impact test at	
		C Max	MIN max	P max	S max	Si max	Ni	Cr	Mo	Cu	Other							
A53	A	0.25	0.95	0.05	0.06		0.40max	0.40max	0.15max	0.40max	0.08max		330	205	36			
	B	0.30	1.20	0.05	0.06		0.40max	0.40max	0.15max	0.40max	0.08max		415	415	240			
A106	A	0.25	0.27-0.93	0.035	0.035	0.10min	0.40max	0.40max	0.15max	0.40max	0.08max		330	205	L35-T25			
	B	0.30	0.29-1.06	0.035	0.035	0.10min	0.40max	0.40max	0.15max	0.40max	0.08max		415	240	L30-T16.5			
	C	0.35	0.29-1.06	0.035	0.035	0.10min	0.40max	0.40max	0.15max	0.40max	0.08max		485	275	L30-T16.5			
A312	TP 304	0.08	2.00	0.040	0.030	0.75	8.00-10.0	18.0-20.0					515	205	L35-T25			
	TP 304L	0.035	2.00	0.040	0.030	0.75	8.00-12.0	18.0-20.0					485	170	L35-T25			
	TP 310S	0.08	2.00	0.045	0.030	0.75	19.0-22.0	24.0-26.0	0.75max				515	205	L35-T25			
	TP 316	0.08	2.00	0.040	0.030	0.75	11.0-14.0	16.0-18.0	2.00-3.00				515	205	L35-T25			
	TP 316L	0.035	2.00	0.040	0.030	0.75	10.0-15.0	16.0-18.0	2.00-3.00				485	170	L35-T25			
	TP 317L	0.035	2.00	0.040	0.030	0.75	11.0-15.0	18.0-20.0	3.00-4.00				515	205	L35-T25			
	TP 321	0.08	2.00	0.040	0.030	0.75	9.00-13.0	17.0-20.0					515	205	L35-T25			
TP 347	0.08	2.00	0.040	0.030	0.75	9.00-13.0	17.0-20.0					515	205	L35-T25				
A333	3	0.19	0.31-0.64	0.025	0.025	0.18-0.37	3.18-82	0.44-1.01		0.44-0.75	A10.40-0.30		450	240	L30-T20		-100 -150	
	4	0.12	0.50-1.05	0.025	0.025	0.08-0.37	0.47-0.98						415	240	L30-T16.5		-100 -150	
	6	0.30	0.29-1.06	0.025	0.025	0.10min	2.03-2.57						450	240	L30-T16.5		-45 -50	
	7	0.19	0.90	0.025	0.025	0.13-0.32	8.40-9.60						690	515	L22		-75 -100	
	8	0.13	0.90	0.025	0.025	0.13-0.32	1.60-2.24						515	515	L22		-195 -320	
	9	0.20	0.40-1.06	0.025	0.025	0.20-0.50				0.75-1.25			435	515	L28		-75 -100	
	P1	0.10-0.20	0.30-0.80	0.025	0.025	0.10-0.05							380	205	L30-T20			
	P2	0.10-0.20	0.30-0.61	0.025	0.025	0.10-0.30	0.50-0.81	0.50-0.81	0.44-0.65				380	205	L30-T20			
	P5	0.15	0.30-0.60	0.025	0.025	0.50	4.00-6.00	4.00-6.00	0.45-0.65				415	205	L30-T20			
A335	P8	0.15	0.30-0.60	0.025	0.025	0.25-1.00	8.00-10.0	8.00-10.0	0.90-1.10				415	205	L30-T20			
	P9	0.15	0.30-0.60	0.025	0.025	0.50-1.00	1.00-1.50	1.00-1.50	0.44-0.65				415	205	L30-T20			
	P11	0.05-0.15	0.30-0.60	0.025	0.025	0.50	0.08-1.25	0.08-1.25	0.44-0.65				415	205	L30-T20			
	P12	0.05-0.15	0.30-0.61	0.025	0.025	1.15-1.65			0.44-0.65				415	205	L30-T20			
	P15	0.05-0.15	0.30-0.60	0.025	0.025	0.50	2.65-3.35	2.65-3.35	0.80-1.06				415	205	L30-T20			
	P21	0.05-0.15	0.30-0.60	0.025	0.025	0.50	1.90-2.60	1.90-2.60	0.87-1.13				415	205	L30-T20			
	P22	0.05-0.15	0.30-0.60	0.025	0.025	0.50	8.00-9.50	8.00-9.50	0.85-1.05				585	415	L20			
	P91	0.08-0.12	0.30-0.60	0.025	0.025	0.20-0.50	0.40max	0.40max					585	415	L20			
	A358	TP304	0.08	2.00	0.045	0.030	0.75	8.0-10.50	18.0-20.0									
TP310		0.08	2.00	0.045	0.030	0.50	19.0-22.0	24.0-26.0										
TP316		0.08	2.00	0.045	0.030	0.75	10.0-14.0	16.0-18.0										
TP316L		0.08	2.00	0.045	0.030	0.75	10.0-14.0	16.0-18.0	2.0-3.0									
TP317L		0.030	2.00	0.045	0.030	0.75	11.0-15.0	18.0-20.0	2.0-3.0									
TP321		0.08	2.00	0.045	0.030	0.75	9.0-12.0	17.0-19.0	3.0-4.0									
TP347		0.08	2.00	0.045	0.030	0.75	9.0-13.0	17.0-19.0										

L-Longitudinal  
T- Transverse

Formula - Sheet Width Required for Rolled & Welded Pipes - O.D. (mm) - Thickness (mm) x 3.14 Sheet Width.



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DN (inch)	OD (mm)		5 S	5	10 S	10	20	30	STD	40S	40	60	XS	80C	80	100	120	140	160	XXS	
1/8	10.3	WT			1.24	1.24		1.45	1.73	1.73	1.73		2.41	2.41	2.41						
		Kg/m			0.28	0.28		0.32	0.37	0.37	0.37		0.47	0.47	0.47						
1/4	13.7	WT			1.65	1.65		1.85	2.24	2.24	2.24		3.02	3.02	3.02						
		Kg/m			0.49	0.49		0.54	0.63	0.63	0.63		0.8	0.8	0.8						
3/8	17.1	WT			1.65	1.65		1.85	2.31	2.31	2.31		3.2	3.2	3.2						
		Kg/m			0.63	0.63		0.7	0.84	0.84	0.84		1.1	1.1	1.1						
1/2	21.3	WT	1.65	1.65	2.11	2.11		2.41	2.77	2.77	2.77		3.73	3.73	3.73					4.78	7.47
		Kg/m	0.8	0.8	1	1		1.12	1.27	1.27	1.27		1.62	1.62	1.62					1.95	2.55
3/4	26.7	WT	1.65	1.65	2.11	2.11		2.41	2.87	2.87	2.87		3.91	3.91	3.91					5.56	7.82
		Kg/m	1.02	1.02	1.28	1.28		1.44	1.69	1.69	1.69		2.2	2.2	2.2					2.9	3.64
1	33.4	WT	1.65	1.65	2.77	2.77		2.9	3.38	3.38	3.38		4.55	4.55	4.55					6.35	9.09
		Kg/m	1.29	1.29	2.09	2.09		2.18	2.5	2.5	2.5		3.24	3.24	3.24					4.24	5.45
1 1/8	42.2	WT	1.65	1.65	2.77	2.77		2.97	3.56	3.56	3.56		4.85	4.85	4.85					6.35	9.7
		Kg/m	1.65	1.65	2.69	2.69		2.87	3.39	3.39	3.39		4.47	4.47	4.47					5.61	7.77
1 1/2	48.3	WT	1.65	1.65	2.77	2.77		3.18	3.68	3.68	3.68		5.08	5.08	5.08					7.14	10.2
		Kg/m	1.9	1.9	3.11	3.11		3.54	4.05	4.05	4.05		5.41	5.41	5.41					7.25	9.55
2	60.3	WT	1.65	1.65	2.77	2.77		3.18	3.91	3.91	3.91		5.54	5.54	5.54					8.74	11.1
		Kg/m	2.39	2.39	3.93	3.93		4.48	5.44	5.44	5.44		7.48	7.48	7.48					11.1	13.4
2 1/2	73	WT	2.11	2.11	3.05	3.05		4.78	5.16	5.16	5.16		7.01	7.01	7.01					9.53	14
		Kg/m	3.69	3.69	5.26	5.26		8.04	8.63	8.63	8.63		11.4	11.4	11.4					14.9	20.4
3	88.9	WT	2.11	2.11	3.05	3.05		4.78	5.49	5.49	5.49		7.62	7.62	7.62					11.1	15.2
		Kg/m	4.52	4.52	6.46	6.46		9.92	11.3	11.3	11.3		15.3	15.3	15.3					21.4	27.7
3 1/2	102	WT	2.11	2.11	3.05	3.05		4.78	5.74	5.74	5.74		8.08	8.08	8.08						
		Kg/m	5.18	5.18	7.41	7.41		11.4	13.6	13.6	13.6		18.6	18.6	18.6						
4	114	WT	2.11	2.11	3.05	3.05		4.78	6.02	6.02	6.02		8.56	8.56	8.56		11.1			13.5	17.1
		Kg/m	5.84	5.84	8.37	8.37		12.9	16.1	16.1	16.1		22.3	22.3	22.3		28.3			33.5	41
5	141	WT	2.77	2.77	3.4	3.4		6.55	6.55	6.55	6.55		9.53	9.53	9.53		12.7			15.9	19.1
		Kg/m	9.46	9.46	11.6	11.6		21.8	21.8	21.8	21.8		31	31	31		40.3			49.1	57.4
6	168	WT	2.77	2.77	3.4	3.4		7.11	7.11	7.11	7.11		11	11	11		14.3			18.3	22
		Kg/m	11.3	11.3	13.8	13.8		28.3	28.3	28.3	28.3		42.6	42.6	42.6		54.2			67.6	79.2
8	219	WT	2.77	2.77	3.76	3.76	6.35	7.04	8.18	8.18	8.18	10.3	12.7	21.7	12.7	15.1	18.3	20.6		23	22.2
		Kg/m	14.8	14.8	20	20	33.3	36.8	42.6	42.6	42.6	53.1	64.6	64.6	64.6	75.9	90.4	101	111	108	
10	273	WT	3.4	3.4	4.19	4.19	6.35	7.8	9.27	9.27	9.27	12.7	12.7	12.7	15.1	18.3	21.4	25.4	28.6	25.4	
		Kg/m	22.6	22.6	27.8	27.8	41.8	51	60.3	60.3	60.3	81.5	81.5	81.5	96	115	133	155	172	155	
12	324	WT	3.96	3.96	4.57	4.57	6.35	8.38	9.53	9.53	10.3	14.3	12.7	12.7	17.5	21.4	25.4	28.6	33.3	25.4	
		Kg/m	31.2	31.2	36	36	49.7	65.2	73.9	73.9	79.7	109	97.5	97.5	132	160	187	208	239	187	
14	356	WT	3.96	3.96	4.78	6.35	7.92	9.53	9.53		11.1	15.1	12.7		19.1	23.8	27.8	31.8	35.7		
		Kg/m	34.3	34.3	41.4	54.7	67.9	81.3	81.3		94.6	127	107		158	195	225	254	282		
16	406	WT	4.19	4.19	4.78	6.35	7.92	9.53	9.53		12.7	16.7	12.7		21.4	26.2	31	36.5	40.5		
		Kg/m	41.6	41.6	47.3	62.6	77.8	93.3	93.3		123	160	123		204	246	287	333	365		
18	457	WT	4.19	4.19	4.78	6.35	7.92	11.1	9.53		14.3	19.1	12.7		23.8	29.4	34.9	39.7	45.2		
		Kg/m	46.8	46.8	53.3	70.6	87.7	122	105		156	206	139		255	310	364	408	459		
20	508	WT	4.78	4.78	5.54	6.35	9.53	12.7	9.53		15.1	20.6	12.7		26.2	32.5	38.1	44.5	50		
		Kg/m	59.3	59.3	68.6	78.6	117	155	117		183	248	155		311	382	441	508	565		
22	559	WT	4.78	4.78	5.54	6.35	9.53	12.7	9.53			22.2	12.7		28.6	34.9	41.3	47.6	54		
		Kg/m	65.3	65.3	75.6	86.5	129	171	129			294	171		374	451	527	601	672		
24	610	WT	5.54	5.54	6.35	6.35	9.53	14.3	9.53		17.5	24.6	12.7		31	38.9	46	52.4	59.5		
		Kg/m	82.6	82.6	94.5	94.5	141	210	141		255	355	187		442	548	640	720	808		
26	660	WT			7.92	12.7		9.53					12.7								
		Kg/m			127	203		153													
28	711	WT			7.92	12.7	15.9	9.53					12.7								
		Kg/m			137	219	272	165													
30	762	WT	6.35	6.35	7.92	7.92	12.7	15.9	9.53				12.7								
		Kg/m	118	118	147	147	235	292	177												
32	813	WT			7.92	12.7	15.9	9.53		17.5			12.7								
		Kg/m			157	251	312	189		343											
34	864	WT			7.92	12.7	15.9	9.53		17.5			12.7								
		Kg/m			167	267	332	201		365											
36	914	WT			7.92	12.7	15.9	9.53		19.1			12.7								
		Kg/m			177	282	352	213		420											



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Specification	OD (mm)		WT (mm)		LENGTH (mm)		
	SIZE	PERMISSIBLE VARIATION	SIZE	PERMISSIBLE VARIATION	SIZE	PERMISSIBLE VARIATION	
ASTM A312	[10.29,48.26]	+0.40/-0.80		+12.5%		+6/-0	
	[48.26,114.30]	+0.80/-0.80					
	[114.30,219.08]	+1.6/-0.80					
	[219.08,457.20]	+2.40/-0.80					
ASTM A213	D<25.4	+0.10/-0.10	D≤38.1	+20%/-0	D>50.8	+3/-0	
	[25.4,38.1]	+0.15/-0.15					
	[38.1,50.8]	+0.20/-0.20					
	[50.8,63.5]	+0.20/-0.25	D>38.1		+20%/-0	D≥50.8	+5/-0
	[63.5,76.2]	+0.30/-0.30					
	[101.6,190.5]	+0.38/-0.38					
ASTM A269	D<12.7	+0.13/-0.13		+15%		+3.2/-0	
	[12.7,38.1]			±10%		+4.8/-0	
	[38.1,88.9]	+0.25/-0.25					
	[88.9,139.7]	+0.38/-0.38					
	[139.7,203.2]	+0.76/-0.76					
JIS G3459	D<30	+0.30/-0.30	S<2	+20%			
	D>30	+1%	S>2	±10%			
JIS G3463	D<40	+0.25/-0.25	D<40;S<2	+0.40/-0	D<50;L<7	+7/-0	
	[40,50]						
	[50,60]				D<50;L>7		
	[60,80]	+0.30/-0.30	D<40;S>2	+20%/-0	D>50;L<7	+10/-0	
	[80,100]	+0.40/-0.40					
	[100,120]	+0.40/-0.60					
	[120,160]	+0.40/-0.80					
		[160,200]	+0.40/-0.60	D>40	+22%/-0	D>50;L>7	THE SAME AS D<50;L 7M
	D>200	+0.40/-1.60					
GB/T 14975-02	[10,30]	+0.30/-0.30	S<3	+14%	[1.0,3.0]	+15/-0	
	[30,50]	+0.40/-0.40	S>3	+12%/-10%			
	D>50	+0.9%					
GB/T 14976-02	[6,10]	+0.20/-0.20	[0.5,1.0]	+0.15		+15/-0	
	[10,30]	+0.30/-0.30	[1.0,3]	+14%			
	[30,50]	+0.40/-0.40	S>3	12%/-10%			
	D>50	+0.9%					
GB 13296-91	[8,30]	+0.20/-0.20	[1.0,3.0]	+12%/-10%		+15/-0	
	[30,50]	+0.30/-0.30	S>3	+10%			
	D>50	+0.8%					
DIN 17456 DIN 17458	D2	±1.0% ±0.5min	T3	±10% 0.2mm	D<40;L1m	+1/-0	
	D3	±0.75% ±0.3min			D<40;L;(1-2)m	+2/-0	
					D<40;L;(2-3)m	+3/-0	
			D<40;L;(3-4)m		+4/-0		
	D4	±0.5% 0.1min	T4		±7.5% 0.15mm	D<40;L;(4-8)m	+5/-0
					40<D<168		
L<6m				+5/-0			
				L>6m	+10/-0		
ASTM A511 TABLE 3	D<12.7	+0.13/-0.13		+15%		+3.2/-0	
	[12.7,38.1]			±10%		+4.8/-0	
	[38.1,88.9]	+0.25/-0.25					
	[88.9,139.7]	+0.38/-0.38					
	[139.7,203.2]	+0.76/-0.76					
	[203.2,219.8]	+1.14/-1.14					
	[219.8,323.85]	+1.57/-1.57					
ASTM A511 TABLE 4	D<76.2	+0.56/-0.58	S<2.77	+16.5%		+4.76/-0	
			2.77<S<4.37	+15%			
			4.37<S<5.16	+14%			
			S>5.16	+12.5%			
	[76.2,139.7]	+0.79/-0.79	S<2.77	+16.5%			
			2.77<S<4.37	+15%			
			4.37<S<5.16	+14%			
			S>5.16	+12.5%			
[139.7,203.2]	+1.19/-1.19	4.37<S<5.16	+14%				
		S>5.16	+12.5%				





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Specification	Allowable Outside Diameter Variations in mm			Allowable Wall Thickness Variations		Exact Length Tolerances in mm		Testing
	Diameter	Over	Under	Over %	Under %	Over	Under	
ASTMA - 270 Seamless & Welded Sanitary Tubing	25.4 38.1 50.8 63.5 76.2 101.6	0.5 0.5 0.5 0.5 0.8 0.8	20 20 28 28 30 38	+ 12.5 + 12.5 + 12.5 + 12.5 + 12.5 + 12.5	- 12.5 - 12.5 - 12.5 - 12.5 - 12.5 - 12.5	3.2 3.2 3.2 3.2 3.2 3.2	0 0 0 0 0 0	Product Analysis  Reverse Flattening test 100% Hydrostatic Test External polish on all tubes  Refer to ASTM - 270
ASTMA - 249 Welded Boiler Superheater Heat Exchanger and Condenser tubes	Under 25.4 25.4 - 38.1 incl. 38.1 - 50.8 excl. 50.8 - 63.5 excl. 63.5 - 76.2 excl. 76.2 - 101.6 incl.	0.1016 0.1524 0.2032 0.254 0.3048 0.381	0.1016 0.1524 0.2032 0.254 0.3048 0.381	+10 +10 +10 +10 +10 +10	-10 -10 -10 -10 -10 -10	3.175 3.175 3.176 3.76 4.76 4.76	0 0 0 0 0 0	Product analysis Tension test Flattening test Flare test / Flange test *Reverse bend test Hardness test 100% hydrostatic test *Reverse Flattening test Refer to ASTM - 450 *Wherever applicable
ASTMA - 312 Seamless and Welded pipe	13.7 - 48.3 incl. 48.3 - 114.3 incl. 114.3 - 220 incl.	04 0.79 01.59	0.79 0.79 0.79	Minimum Wall 12.5% Under nominal wall Specified		6.4 6.4 6.4	0 0 0	Product analysis Tension test Flattening test 100% hydrostatic test  Refer to ASTM -530
ASTMA - 269 Seamless and Welded service	Upto 12.7 12.7 - 38.1 excl. 38.1 - 88.99 excl. 88.9 - 139.7 excl. 139.7 - 2032 excl.	0.13 0.13 0.25 0.38 0.76	0.13 0.13 0.25 0.38 0.75	+15 +10 +10 +10 +10	-15 -10 -10 -10 -10	3.2 3.2 4.8 4.8 4.8	0 0 0 0 0	Product analysis Flare test Flant test (Welded only) Hardness test Reverse Flattening test (Welded only) 100% hydrostatic test Refer to ASTM - 269
ASTMA - 213 Seamless Boiler Superheater and Heat Exchanger Tubes	Under 25.4 25.4 - 38.1 incl. 38.1 - 50.8 excl. 50.8 - 63.5 incl. 63.5 - 76.2 excl. 76.2 - 101.6 incl.	0.1016 0.1524 0.2032 0.254 0.3048 0.381	0.1016 0.1524 0.2032 0.254 0.3048 0.381	+20 +20 +22 +22 +22 +22	-0 -0 -0 -0 -0 -0	3.175 3.175 3.176 3.76 4.76 4.76	0 0 0 0 0 0	Product analysis Tension test Flattening test Flare test Hardness test 100% hydrostatic test  Refer to ASTM - 450
ASTMA - 268 Seamless & welded Fermic stainless Steel tubes	Under 12.7 12.7 - 38.1 excl. 38.1 - 88.9 excl. 88.9 - 168.3 excl.	0.13 0.13 0.25 0.38	0.13 0.13 0.25 0.38	+15 +10 +10 +10	-15 -10 -10 -10	3.2 3.2 4.8 4.8	0 0 0 0	Product analysis Tension test , Flare test Flange test (ERW only) Hardness test Reverse flattening test 100% hydrostatic test
ASTMA - 358 for welded Big diameter Pipes	For all sizes	+0.5%	0.5%	No Limit	-0.3 mm	Customer's Specification		Product analysis Tranvers tension test, transverse guided bend test. Hydrostatic test, radiographic examination(as specified dye penetrant (optional)



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GRADE	UNS NUMBER	MANUFACTURER'S DESIGNATION	CARBON MAX	PHOSPHORUS MAX	SULFUR MAX	SI MAX	CU MAX	NICKEL	CHROMIUM	MOLYBDE NUM MAX	TITANIUM	WITROGEN	COPPER	IRON	ALUMINIUM	OTHERS	COBALT	VANADIUM	TENSILE STRENGTH (MIN/MPa)	YIELD STRENGTH (MIN/MPa)	ELONGATION% (CONV. MIN)	GRADE
304	S30400	ASTMA312	.08	2.00	.04	.03	.75	8.00 - 11.00	18.00 - 20.00										75(515)	30(205)	35	304
304H	S30409	ASTMA312	.04-10	2.00	.04	.03	.75	8.00 - 11.00	18.00 - 20.00										75(515)	30(205)	35	304H
304L	S30403	ASTMA312	.03	2.00	.04	.03	.75	8.00 - 11.00	18.00 - 20.00										75(515)	30(205)	35	304L
316	S31600	ASTMA312	.08	2.00	.04	.03	.75	10.00 - 14.00	16.00 - 18.00	7.5									75(515)	30(205)	35	316
316H	S31609	ASTMA312	.04-10	2.00	.04	.03	.75	11.00 - 14.00	16.00 - 18.00	2.00 - 3.00									75(515)	30(205)	35	316H
316L	S31703	ASTMA312	.035	2.00	.04	.03	.75	11.00 - 15.00	16.00 - 18.00	2.00 - 3.00									75(515)	30(205)	35	316L
317L	S31703	ASTMA312	.035	2.00	.04	.03	.75	9.00 - 13.00	17.00 - 20.00	3.00 - 4.00									75(515)	30(205)	35	317L
321	S32103	ASTMA312	.08	2.00	.04	.03	.75	9.00 - 13.00	17.00 - 20.00										75(515)	30(205)	35	321
321H	S34709	ASTMA312	.08	2.00	.04	.03	.75	9.00 - 13.00	17.00 - 20.00										75(515)	30(205)	35	321H
347	S34709	ASTMA312	.08	2.00	.04	.03	.75	9.00 - 13.00	17.00 - 20.00										75(515)	30(205)	35	347
347H	S34700	ASTMA312	.04-10	2.00	.04	.03	.75	9.00 - 13.00	17.00 - 20.00										75(515)	30(205)	35	347H
6%MoLY SUPER DUPLEX	S31254	ASTMA312	.02	1.00	.03	.01	0.80	17.50 - 19.50	19.50 - 20.50	6.00 - 6.50									54(650)	44(300)	35	6MoLY SUPER DUPLEX
904L	N89004	ASTMB9677	.02	2.00	.045	0.35	1.00	23.00 - 28.00	19.00 - 23.00	4.00 - 5.00									71(490)	31(220)	35	904L
ALLOY 20	N64000	ASTMB964	.07	2.00	.045	0.35	1.00	32.00 - 36.00	19.00 - 21.00	2.00 - 3.00									80(651)	35(241)	30	ALLOY 20
ALLOY 400	N64000	ASTMB165	.30	2.00	.024	.50	63.00min	14.00 - 17.00	8.00 - 10.00										H	H	H	ALLOY 400
ALLOY 600	N66000	ASTMB167	.15	1.00	.015	.50	72.00min	20.00 - 23.00	8.00 - 10.00										H	H	H	ALLOY 600
ALLOY 625	N66255	ASTMB444	.10	1.50	.015	1.00	58.00min	30.00 - 35.00	19.00 - 23.00										H	H	H	ALLOY 625
ALLOY 800	N88000	ASTMB407	.10	1.50	.015	1.00	30.00 - 35.00	19.00 - 23.00	15.80										H	H	H	ALLOY 800
ALLOY 800-HRT	N88010	HASTMB9407	.06-10	1.50	.015	1.00	30.00 - 35.00	19.00 - 23.00	15.80										H	H	H	ALLOY 800-HRT
ALLOY 825	N88825	ASTMB9423	.05	1.00	.03	.50	38.00 - 40.00	19.50 - 23.50	15.80 - 17.20										H	H	H	ALLOY 825
ALLOY C22	N60222	ASTMB9622	.015	.50	.02	.08	Remainder	20.00 - 22.50											35max	100(680)	45(310)	ALLOY C22
ALLOY C276	N10276	ASTMB9622	.01	1.00	.04	0.3	Remainder	14.50 - 16.50											100(650)	41(283)	40	ALLOY C276
TITANIUM	GRADE 2	ASTMB337	.10																50(345)	40(6375-150)	20	TITANIUM

- A. For Welded Tp316, TP316H, the Nickel range shall be 10.00 - 14%
- B. The Titanium content shall be not less than five times the carbon and not more than 0.70%
- C. The Titanium content shall be not less than four times the carbon content and not more than 1.00%
- D. The Columbium plus Tantalum content shall be not less than ten times the carbon content and not more than 1.00%
- D. The Columbium plus Tantalum content shall be not less than eight times the carbon content and not more than 1.00%
- G. Alloy No8811 is 0.06 - 10%
- H. See ASTM specification Results depend on condition
- J. Alloy No8811 : Al + Ti = 0.85 - 1.20%
- K. Hydrogen 0.015% Max Oxygen 25% Max
- L. 40 min by formula % CR + 3.3 x% Mo + % N

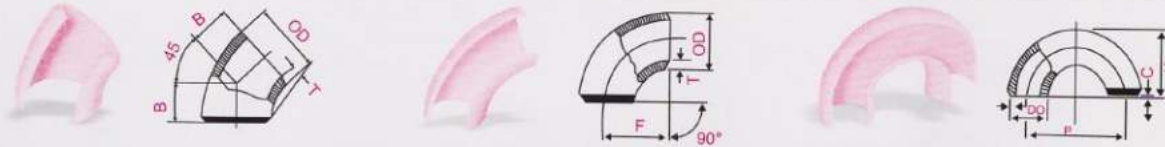
\*Seamless greater than 3/8 inch- Tensile 70 (485) Yield 25 (170)

**Note** : For precise details, including tolerance and residual elements see ASTM specifications



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Nominal diameter		Outside diameter		Center to end			Kg / pcs approx weight									
DN	INCH	GB	ASME	F	B		sch5s	sch10s	sch20s	sch20	STD	sch40	Xs	sch80	sch120	
					GB	ASME										
15	1/2	18 21.3	21.3	38	16	16	0.04 0.05	0.05 0.06	0.058 0.063	-	0.06 0.08	0.06 0.08	0.18 0.10	0.08 0.10	-	
20	3/4	25 26.9	26.7	38	16	19	0.06 0.06	0.07 0.08	0.08 0.09	-	0.09 0.10	0.09 0.10	0.19 0.13	0.13 0.13	-	
25	1	32 33.7	33.4	38	16	22	0.07 0.08	0.12 0.13	0.13 0.135	-	0.14 0.14	0.14 0.14	0.18 0.19	0.18 0.19	-	
32	1.1/4	38 42.4	42.4	48	20	25	0.11 0.13	0.18 0.21	0.21 0.24	-	0.23 0.26	0.23 0.26	0.31 0.35	0.31 0.35	-	
40	1.1/2	45 48.3	48.3	57	24	29	0.16 0.17	0.26 0.28	0.30 0.32	-	0.33 0.35	0.33 0.35	0.44 0.48	0.44 0.48	-	
50	2	57 60.3	60.3	76	32	35	0.28 0.29	0.45 0.47	0.59 0.61	-	0.62 0.66	0.62 0.66	0.85 0.90	0.85 0.90	-	
65	2.1/2	76 76.1	73	95	40	44	0.55 0.57	0.80 0.83	0.96 1.1	-	1.25 1.31	1.25 1.31	1.72 1.80	1.72 1.80	-	
80	3	89 88.9	88.9	114	47	51	0.80	1.17	1.6	-	2.06	2.06	2.86	2.86	-	
90	3.1/2	101.6	101.6	133	55	57	1.09	1.57	2.1	-	2.74	2.74	3.82	3.82	-	
100	4	108 114.3	114.3	152	63	64	1.31 1.39	1.91 2.03	2.65 2.87	-	2.54 3.76	3.54 3.76	5.13 5.46	5.13 5.46	6.27 6.68	
125	5	113 139.7	141.3	190	79	59	2.68 2.87	3.24 3.41	4.81 5.06	-	6.16 6.47	6.16 6.47	8.71 9.14	8.71 9.14	11.3 11.9	
150	6	159 168.3	168.3	229	95	95	3.85 4.10	4.69 4.96	6.97 7.38	-	9.56 10.1	9.56 10.1	14.4 15.3	14.4 15.3	18.6 19.8	
200	8	219 219.1	219.1	305	126	127	7.15 7.15	9.65 9.65	16.1 16.1	-	20.4 20.4	20.4 20.4	31.0 31.0	31.0 31.0	43.1 43.1	
250	10	273 273	273	381	158	159	13.7	16.7	25.8	-	36.2	36.2	48.8	57.2	79.7	
300	12	325 323.9	323.9	457	189	190	23.0 22.6	26.1 26.0	36.1 36.0	-	55.7 52.8	55.7 52.8	70.2 69.9	95.2 94.8	133 133	
350	14	377 355.6	355.6	533	221	222	30.8 29.0	36.9 36.7	36.9 34.7	-	75.7 68.0	83.1 78.2	95.5 89.9	147 138	202 189	
400	16	426 406.4	406.4	610	253	254	41.8 39.9	47.7 45.5	78.0 74.3	-	98.2 89.2	122 161	124 118	211 201	280 267	
450	18	478 457	457	686	284	286	52.9 50.5	60.3 57.7	87.7 83.3	-	124 119	175 167	157 150	301 287	422 403	
500	20	529 508	508	762	316	318	74.2 71.3	84.9 81.5	146 140	-	153 147	242 232	193 186	414 396	577 552	
550	22	559	559	838	347	343	86.3	98.8	169	-	169		225	496	694	
600	24	630 610	610	914	379	381	122 118	141 137	209 202	-	209 202	379 367	227 268	657 638	951 918	
650	26	660	660	991	410	405	-	-	315	-	237		315			
700	28	720 711	711	1067	442	438	-	-	317 366	-	279 375	-	371 366	-	-	
750	30	762	762	1143	473	470	214	264	421	-	316		412			
800	32	820 813	813	1219	505	502		-	484 480	-	363 260	663 657	481 480	-	-	
850	34	864	864	1295	537	533		-	542	-	407	742	542			
900	36	920 914	914	1372	568	565		-	612 608	-	459 456	914 908	612 608	-	-	



# C.V. METAL CORPORATION

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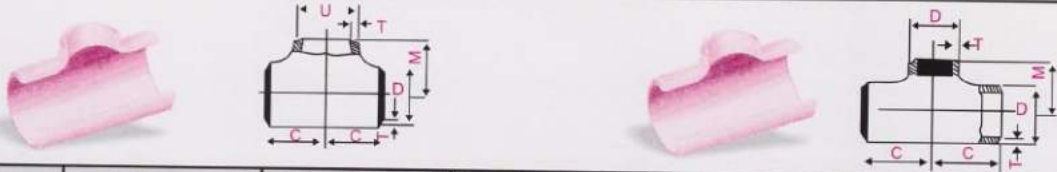


Normal diameter		Outside	Center To end		Kg/ bcs approx weight							
DN	INCH	D <sub>1</sub> X D <sub>2</sub>	C	M	sch5s	sch10s	sch20s	STD	sch40	XS	sch80	sch120
20x 20	3/4X3/4	25X25	29	29	0.07	0.10	0.12	0.13	0.13	0.16	0.16	-
		26.7X26.7			0.08	0.11	0.13	0.15	0.15	0.18	0.18	-
20 x 15	3/4X1/2	25X18	29	29	0.06	0.09	0.11	0.12	0.12	0.15	0.15	-
		26.7X21.3			0.07	0.10	0.12	0.13	0.13	0.16	0.16	-
25 x 25	1X1	32X32	38	38	0.11	0.19	0.21	0.23	0.23	0.30	0.30	-
		33.4X33.4			0.12	0.20	0.22	0.25	0.25	0.32	0.32	-
25 x 20	1/3X4	32X25	38	38	0.10	0.18	0.20	0.22	0.22	0.28	0.28	-
		33.4X26.7			0.11	0.19	0.21	0.24	0.24	0.31	0.31	-
25 x 15	1X1/2	32X18	38	38	0.09	0.17	0.19	0.21	0.21	0.27	0.27	-
		33.4X21.3			0.10	0.18	0.20	0.23	0.23	0.30	0.30	-
32 x 32	1.1/4X1.14	38X38	48	48	0.19	0.36	0.39	0.42	0.42	0.63	0.63	-
		42.2X42.2			0.20	0.39	0.45	0.52	0.52	0.73	0.73	-
32 x 25	1.1/4X1	38X32	48	48	0.18	0.33	0.37	0.40	0.40	0.58	0.58	-
		42.2X33.4			0.19	0.35	0.39	0.42	0.42	0.68	0.68	-
32 x 20	1.1/4X3/4	38X25	48	48	0.17	0.31	0.34	0.38	0.38	0.55	0.55	-
		42.2X26.7			0.18	0.32	0.36	0.40	0.40	0.65	0.65	-
32 x 15	1.1/4X1/2	38X18	48	48	0.16	0.30	0.33	0.36	0.36	0.52	0.52	-
		42.2X21.3			0.17	0.31	0.35	0.38	0.38	0.68	0.68	-
40 x 40	1.1/2X1.1/2	45X45	57	57	0.35	0.59	0.65	0.78	0.78	1.08	1.08	-
		48.3X48.3			0.45	0.69	0.76	0.88	0.88	1.18	1.18	-
40 x 32	1.1/2X1.1/4	45X38	57	57	0.32	0.54	0.63	0.72	0.72	0.99	0.99	-
		48.3X42.2			0.42	0.65	0.75	0.82	0.82	1.09	1.09	-
40 x 25	1.1/2X1	45X32	57	57	0.27	0.45	0.52	0.60	0.60	0.83	0.83	-
		48.3X33.4			0.37	0.65	0.73	0.80	0.80	1.08	1.03	-
40 x 20	1.1/2X3/4	45X25	57	57	0.26	0.44	0.51	0.58	0.58	0.80	0.80	-
		48.3X26.7			0.36	0.64	0.66	0.68	0.68	1.00	1.00	-
45 x 15	1.1/2X1/2	45X18	57	57	0.25	0.42	0.48	0.56	0.56	0.78	0.78	-
		48.3X21.3			0.35	0.62	0.64	0.66	0.66	0.78	0.78	-
50 x 50	2X2	57X57	64	64	0.49	1.03	1.11	1.15	1.15	1.65	1.65	-
		60.3X60.3			0.50	1.05	1.13	1.18	1.18	1.67	1.67	-
50 x 40	2X1.1/2	57X45	64	60	0.44	0.93	1.01	1.04	1.04	1.48	1.48	-
		60.3X48.3			0.45	0.95	1.03	1.06	1.06	1.50	1.50	-
50 x 32	2X1.1/4	57X38	64	57	0.40	0.81	0.88	0.98	0.98	1.37	1.37	-
		60.3X42.2			0.43	0.89	0.94	1.00	1.00	1.42	1.42	-
50 x 25	2X1	57X32	64	51	0.39	0.72	0.83	0.92	0.92	1.31	1.31	-
		60.3X33.4			0.40	0.84	0.88	0.94	0.94	1.34	1.34	-
50 x 20	2X3/4	57X25	64	44	0.37	0.70	0.77	0.87	0.87	1.24	1.24	-
		60.3X26.7			0.38	0.80	0.85	0.90	0.90	1.26	1.26	-
65 x 65	2.1/2X2.1/2	76X76	76	76	0.87	1.25	1.73	2.12	2.12	2.88	2.88	-
		73.0X73.0			0.86	1.21	1.65	2.10	2.10	2.80	2.80	-
65 X 50	2.1/2X2	76X57	76	70	0.82	1.17	1.54	2.00	2.00	2.70	2.74	-
		73.0X60.3			0.81	1.16	1.48	1.98	1.98	2.65	2.09	-
65 X 40	2.1/2X2.1/2	76X45	76	67	0.77	1.11	1.41	1.89	1.89	2.56	2.56	-
		73.0X48.3			0.76	1.10	1.38	1.88	1.88	2.55	2.55	-
65 X 32	2.1/2X1.1/4	76X38	76	64	0.75	1.10	1.35	1.80	1.80	2.50	2.50	-
		73.0X42.2			0.74	1.08	1.30	1.89	1.89	2.25	2.25	-
65 X 25	2.1/2X1	76X32	76	57	0.76	1.10	1.34	1.86	1.86	2.53	2.53	-
		73.0X33.4			0.70	1.07	1.28	1.81	1.81	2.08	2.08	-



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Normal diameter		Outside diameter	Center To end		Kg/ bcs approx weight							
DN	INCH	D <sub>1</sub> X D <sub>2</sub>	C	M	sch5s	sch10s	sch20s	STD	sch40	XS	sch80	sch120
80 X 80	3 X 3	89 X 89	86	86	1.16	1.68	2.21	3.02	3.02	4.19	4.19	-
80 X 65	3 X 2.1/2	89 X 76	86	83	1.11	1.62	2.13	2.89	2.89	4.02	4.02	-
		88.9 X 73.0			1.10	1.60	2.08	2.87	3.98	3.98	-	
80 X 50	3 X 2	89 X 57	86	76	1.06	1.53	2.05	2.76	2.76	3.81	3.81	-
		88.9 X 60.3			1.07	1.55	2.10	2.79	2.79	3.85	3.85	-
80 X 40	3 X 1.1/2	89 X 45	86	73	1.01	1.49	1.98	2.67	2.67	3.70	3.70	-
		88.9 X 48.3			1.03	1.50	2.01	2.69	2.69	3.73	3.73	-
80 X 32	3 X 1.1/4	89 X 38	86	70	1.00	1.48	1.97	2.65	2.65	3.68	3.68	-
		88.9 X 42.2			1.00	1.45	1.95	2.60	2.60	3.60	3.60	-
90 X 90	3.1/2 X 3.1/2	101.6 X 101.6	95	95	1.33	1.92	2.53	3.61	3.61	5.08	5.08	-
90 X 80	3.1/2 X 3	101.6 X 88.9	95	92	1.26	1.82	2.41	3.43	3.43	4.83	4.83	-
90 X 65	3.1/2 X 2.1/2	101.6 X 73.0	95	89	1.22	1.76	2.35	3.32	3.32	4.67	4.67	-
90 X 50	3.1/2 X 2	101.6 X 60.3	95	83	1.20	1.73	2.31	3.25	3.25	4.57	4.57	-
90 X 40	3.1/2 X 1.1/2	101.6 X 48.3	95	79	1.17	1.70	2.26	3.21	3.21	4.51	4.51	-
100 X 100	4 X 4	108 X 108	105	105	1.66	2.41	3.02	4.75	4.75	6.75	6.75	8.78
		114.3 X 114.3			1.75	2.54	3.26	5.01	5.01	7.12	7.12	9.26
100 X 90	4 X 3.1/2	114.3 X 101.6	105	102	1.70	2.46	3.19	4.85	4.85	6.89	6.89	8.96
100 X 80	4 X 3	108 X 89	105	98	1.55	2.24	3.16	4.42	4.42	6.27	6.27	8.15
		114.3 X 88.9			1.61	2.33	3.21	4.60	4.60	6.52	6.52	8.48
100 X 65	4 X 2.1/2	108 X 76	105	95	1.53	2.21	3.09	4.36	4.36	6.50	6.50	8.45
		114.3 X 73.0			1.60	2.31	3.11	4.56	4.56	6.50	6.50	8.45
100 X 50	4 X 2	108 X 57	105	89	1.51	2.19	3.08	4.32	4.32	6.13	6.13	7.97
		114.3 X 60.3			1.57	2.29	3.19	4.41	4.41	6.12	6.12	9.26
100 X 40	4 X 1.1/2	108 X 45	105	86	1.50	2.09	2.92	4.22	4.22	6.03	6.06	7.88
		114.3 X 48.3			1.55	2.24	3.19	4.00	4.00	6.02	6.04	9.11
125 X 125	5 X 5	133 X 133	124	124	3.18	3.91	6.17	7.53	7.53	10.9	10.9	16.4
		141.3 X 141.3			3.37	4.14	6.31	7.98	7.98	11.6	11.6	15.4
125 X 100	5 X 4	133 X 108	124	117	3.03	3.73	5.76	7.20	7.20	10.4	10.4	13.9
		141.3 X 114.3			3.15	3.90	5.91	7.52	7.52	10.8	10.8	14.5
125 X 90	5 X 3.1/2	141.3 X 101.6	124	114	3.09	3.83	5.83	7.39	7.39	10.6	10.6	14.2
125 X 80	5 X 3	133 X 189	124	111	2.90	3.59	5.42	6.92	6.92	10.0	10.0	13.3
		141.3 X 88.9			3.02	3.74	5.17	7.21	7.21	10.4	10.4	13.8
125 X 65	5 X 2.1/2	133 X 76	124	108	2.85	3.59	5.40	6.92	6.92	10.0	10.0	13.3
		141.3 X 73.0			3.00	3.73	5.71	7.20	7.20	10.4	10.4	13.8
125 X 50	5 X 2	133 X 57	124	105	2.80	3.58	5.38	6.92	6.92	10.0	10.0	13.3
		141.3 X 60.3			3.92	3.73	5.70	7.20	7.20	10.4	10.4	13.8
150 X 150	6 X 6	159 X 159	143	143	4.09	5.03	8.91	10.5	10.5	16.2	16.2	21.0
		168 X 168.3			4.32	5.31	9.10	11.1	11.1	17.1	17.1	22.2
150 X 125	6 X 5	159 X 133	143	137	3.84	4.73	8.33	9.88	9.88	15.2	15.2	19.8
		168.3 X 141.3			4.13	5.08	9.01	10.6	10.6	16.3	16.3	21.3
150 X 100	6 X 4	159 X 108	143	130	3.76	4.64	8.21	9.70	9.70	14.9	14.9	19.3
		168.3 X 114.3			3.95	4.87	8.55	10.2	10.2	15.6	15.6	20.3
150 X 90	6 X 3.1/2	168.3 X 101.6	143	127	3.91	4.82	8.46	10.1	10.1	15.5	15.5	20.1
150 X 80	6 X 3	159 X 89	143	124	3.72	4.56	8.09	9.56	9.56	14.7	14.7	19.0
		168.3 X 88.9			3.93	4.82	8.43	10.0	10.0	15.3	15.3	20.2
150 X 65	6 X 2.1/2	159 X 76	143	121	3.70	4.51	7.93	9.51	9.51	14.6	14.6	19.2
		168.3 X 73.0			3.81	4.72	8.33	10.0	10.0	15.2	15.2	20.0



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Normal diameter		mm Outside diameter D <sub>1</sub> X D <sub>2</sub>	Center To end C	M	Kg/ bcs approx weight							
DN	INCH				sch5s	sch10s	sch20s	STD	sch40	XS	sch80	sch120
200x 200	8 x 8	219 X 219	178	178	7.72	10.4	17.7	22.8	22.8	35.4	35.4	50.8
200 x 150	8 x 6	219 X 159	178	168	6.74	9.20	16.4	19.9	19.9	30.9	30.9	44.4
		219.1 X 168.3			7.17	9.74	16.4	21.1	21.1	32.8	32.8	47.2
200 x 125	8 x 5	219 X 133	178	162	6.61	8.98	15.1	19.5	19.5	30.2	30.2	43.5
		219.1 X 141.3			7.03	9.55	16.1	20.7	20.7	32.3	32.3	46.3
200 x 100	8 x 4	219 X 108	178	156	6.43	8.73	14.7	19.0	20.5	29.4	29.4	42.3
		219.1 X 114.3			6.84	9.39	15.6	19.9	20.2	31.3	31.3	45.0
200 x 90	8 x 3.1/2	219.1 X 101.6	178	152	6.84	9.18	15.5	19.8	20.1	31.1	31.1	44.2
250 x 250	10 x 10	273 X 273	216	216	14.6	18.04	27.39	20.1	40.04	31.1	65.12	92.51
250 x 200	10 x 8	273 X 219	216	208	13.3	16.4	24.9	36.4	36.4	49.8	59.2	84.1
250 x 150	10 x 6	273 X 159	216	194	11.4	15.0	21.3	31.4	31.4	42.7	50.7	72.1
		273.1 X 168.3			12.1	15.0	22.7	33.4	33.4	45.4	54.0	76.7
250 x 125	10 x 5	273 X 133	216	191	11.2	14.6	20.9	30.7	30.7	41.8	49.7	70.6
		273.1 X 141.3			11.9	14.6	22.2	32.7	32.7	44.5	52.9	75.1
250 x 100	10 x 4	273 X 108	216	184	11.0	14.4	20.6	30.3	30.3	41.2	49.0	69.6
		273.1X 114.3			11.7	14.4	21.9	32.2	32.2	42.9	52.1	74.1
300 x 300	12 x 12	325 X325	254	254	21.5	24.8	34.5	51.8	56.1	69.0	95.0	138
		323.9 X 323.9			21.5	24.8	34.5	51.8	56.0	69.0	95.0	138
300 x 250	12 x 10	325 X 273	254	241	20.4	23.6	32.8	49.2	53.3	65.6	90.3	131
		323.9 X 273.1			20.3	23.4	32.1	49.1	53.1	65.2	90.2	130
300 x 200	12 x 8	325 X 219	254	229	20.2	23.3	32.3	48.4	52.4	64.4	88.6	128
		323.9 X 219.1			20.0	23.1	32.1	48.2	52.2	64.2	88.4	118
300 x 150	12 x 6	325 X 159	254	219	18.4	22.5	29.5	44.3	47.9	59.0	81.2	118
		323.9 X 168.3			19.5	22.7	31.3	47.1	51.0	62.7	86.4	136
300 x 125	12 x 5	325 X 133	254	216	18.0	20.8	28.0	43.6	47.1	57.8	79.6	115
		323.9 X 141.3			19.1	22.1	30.7	46.3	50.2	61.5	84.6	126
350 x 350	14 x 14	377 X 377	279	279	27.4	33.1	54.9	66.1	77.2	88.0	132	192
		355.6 X 355.6			25.7	31.1	51.5	62.0	72.5	82.7	124	181
350 x 300	14 x 12	377 X 325	279	270	25.8	31.1	51.6	62.1	72.5	82.7	124	181
		355.6 X 323.9			24.2	29.2	48.5	58.3	68.2	77.7	116	170
350 x 250	14 x10	377 X 273	279	257	25.1	30.3	50.3	60.5	70.8	80.7	121	171
		355.6 X 273.1			23.7	28.6	47.4	57.0	66.7	76.0	114	161
350 x 200	14 x 8	377 X 219	279	248	24.6	29.7	49.2	59.2	69.2	78.0	118	167
		355.6 X 219.1			23.1	27.9	46.2	55.7	65.2	74.2	111	157
350 x 150	14 x 6	377 X 159	279	238	24.0	29.0	48.1	57.9	67.8	77.1	115	163
		355.6 x168.3			22.3	27.1	45.6	54.2	64.8	77.8	110	156
400 X 400	16 X 16	426 x 426	305	305	33.1	38.0	63.0	75.9	101	101	170	246
		406.4 x 406.4			31.4	36.1	59.8	72.3	96.4	96.1	162	234
400 X 350	16 X 14	426 x 377	305	305	32.0	36.8	60.9	73.6	98.1	97.8	179	238
		406.4 x 355.6			30.4	34.9	57.9	70.1	93.4	92.9	170	226
400 X 300	16 X 12	426 x 325	305	295	31.0	35.6	59.0	71.4	95.2	94.7	173	230
		406.4 x 323.9			28.2	34.4	57.7	69.1	90.8	89.2	168	209
400 X 250	16 X 10	426 X 273	305	283	30.2	34.7	57.6	69.9	93.1	92.5	169	225
		406.4 X 273.4			28.7	33.0	54.7	66.6	88.7	87.8	161	209
400 X 200	16 X 8	426 X 219	305	273	29.5	33.9	56.2	68.4	91.1	90.2	165	219
		406.4 X 219.1			28.1	32.3	53.5	65.1	86.8	86	157	



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Normal diameter		mm Outside diameter	Center To end	Kg/ bcs approx weight								
DN	DN	D <sub>1</sub> X D <sub>2</sub>	C	M	sch5s	sch10s	sch20s	STD	sch40	XS	sch80	sch120
400 X 150	16 X 16	426 X 159	305	264	29.2	33.5	55.6	67.6	90.1	89.2	163	217
		406.4 X 168.3			27.7	31.8	52.8	64.4	85.8	84.8	155	206
450 X 450	18 X 18	478 X 478	343	343	41.9	47.8	79.2	95.3	142	127	233	349
		457 X 457			39.8	45.5	75.4	90.7	136	120	218	332
450 X 400	18 X 16	478 X 426	343	330	41.0	46.8	77.5	93.3	140	144	233	342
		457 X 406.4			39.0	44.5	73.8	88.9	133	118	222	325
450 X 350	18 X 14	478 X 377	343	330	40.4	46.1	76.3	91.9	137	142	229	336
		406.4 X 355.6			38.3	43.8	72.5	87.3	130	135	228	320
450 X 300	18 X 12	478 X 325	343	321	39.8	45.4	75.2	90.6	135	140	226	331
		457 X 323.9			37.3	42.6	70.6	85.0	127	131	212	216
450 X 250	18 X 10	478 X 273	343	308	39.3	44.9	74.4	89.6	134	138	223	228
		457 X 273.1			37.3	42.6	70.6	85.0	127	131	212	216
450 X 200	18 X 8	478 X 219	343	298	38.8	44.3	73.4	89.1	132	137	220	225
		457 X 219.1			36.9	42.1	69.7	84.7	126	130	209	213
500 X 500	20 X 20	529 X 529	381	381	58.9	68.2	117	117	186	156	322	469
		508 X 500			56.3	65.3	112	112	178	149	308	449
500 X 450	20 X 18	529 X 478	381	368	57.9	67.1	115	115	183	154	317	462
		508 X 457			55.4	64.2	110	110	175	147	303	441
500 X 400	20 X 16	429 X 426	381	356	57.0	66.0	113	113	180	151	312	454
		508 X 406.4			54.7	63.4	109	109	173	145	299	436
500 X 350	20 X 14	529 X 377	381	356	56.0	64.9	111	111	177	148	306	446
		508 X 355.6			53.7	62.3	107	107	170	142	294	428
500 X 300	20 X 12	529 X 325	381	346	55.0	63.8	109	109	174	146	301	438
		508 X 323.9			52.8	61.2	105	105	167	140	289	421
500 X 250	20 X 10	529 X 273	318	333	54.4	63.0	108	108	172	144	298	433
		508 X 273.1			52.2	60.5	104	104	165	138	286	416
500 X 200	20 X 8	529 X 219	381	324	53.7	62.3	107	107	170	142	294	428
		508 X 219.1			51.5	59.7	102	102	163	137	282	410
550 X 550	22 X 22	559 X 559	419	419	73.5	85.2	146	146	440	195	-	635
550 X 500	22 X 20	559 X 508	419	406	70.7	81.9	141	141	422	187	-	610
550 X 450	22 X 18	559 X 457	419	394	67.7	78.5	135	135	404	180	-	584
550 X 400	22 X 16	559 X 406.4	419	381	66.2	76.7	132	132	395	179	-	571
550 X 350	22 X 14	559 X 355.6	419	381	65.5	75.9	130	130	391	174	-	565
550 X 300	22 X 12	559 X 323.9	419	371	64.0	74.2	127	127	382	170	-	552
550 X 250	22 X 10	559 X 273.1	419	359	62.5	72.5	124	124	374	166	-	540
600 X 600	24 X 24	630 X 630	432	432	96.0	110	165	165	536	220	303	797
		610 X 610			93.9	107	161	161	524	215	296	779
600 X 550	24 X 22	610 X 559	432	432	90.1	103	155	155	503	206	-	748
600 X 500	24 X 20	630 X 529	432	432	92.2	105	158	158	515	211	291	765
		610 X 508			86.4	99.4	148	148	482	198	272	701
600 X 450	24 X 18	630 X 478	432	419	88.4	101	152	152	493	202	278	734
		610 X 457			84.5	96.9	145	145	473	193	266	694
600 X 400	24 X 16	630 X 426	432	406	86.4	99.1	148	148	483	198	272	718
		610 X 406.4			83.2	95.7	143	143	466	191	263	690
600 X 350	24 X 14	630 X 377	432	406	85.5	98.0	147	147	477	195	269	710
		610 X 355.6			81.7	93.5	140	140	456	187	257	678
600 X 300	24 X 12	630 X 325	432	397	83.5	95.8	143	143	466	191	263	678
		610 X 323.9			79.8	91.5	137	137	44	182	251	662
600 X 250	24 X 10	630 X 273	495	384	81.6	93.6	140	140	456	187	257	662
		610 X 273.1			77.9	89.3	134	134	435	178	245	647



# C.V. METAL CORPORATION

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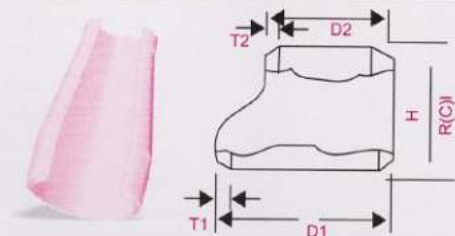
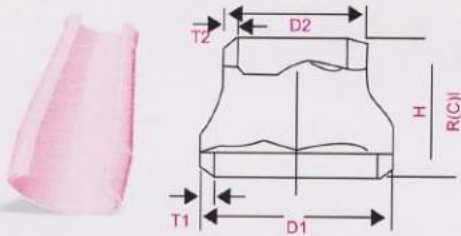
Normal diameter		mm Outside diameter	Center To end	Kg/ bcs approx weight							
DN	INCH	D <sub>1</sub> X D <sub>2</sub>	H	sch5s	sch10s	sch20s	STD	sch40	XS	sch80	sch120
20x 15	3/4 x 1/2	25 X 18	38	0.03	0.04	0.049	0.05	0.05	0.07	0.07	-
		26.7 X 21.3		0.04	0.04	0.05	0.06	0.06	0.07	0.07	-
25 x 20	1 x 3/4	32 X 25	51	0.06	0.09	0.11	0.11	0.11	0.14	0.14	-
		33.4 X 26.7		0.06	0.10	0.11	0.11	0.11	0.15	0.15	-
25 x 15	1 x 1/2	32 X 18	51	0.05	0.08	0.09	0.09	0.09	0.12	0.12	-
		33.4 X 21.3		0.06	0.09	0.10	0.10	0.10	0.13	0.13	-
32 x 25	1.1/4 x 1	38 X 32	51	0.07	0.11	0.125	0.14	0.14	0.18	0.18	-
		42.2 X 33.4		0.08	0.12	0.137	0.15	0.15	0.20	0.20	-
32 x 20	1.1/4 x 3/4	38 X 25	51	0.06	0.10	0.125	0.13	0.13	0.16	0.16	-
		42.2 X 26.7		0.07	0.11	0.13	0.14	0.14	0.18	0.18	-
32 x 15	1.1/4 x 1/2	38X 18	51	0.06	0.09	0.1	0.11	0.11	0.14	0.14	-
		42.2 X21.3		0.07	0.11	0.125	0.13	0.13	0.17	0.17	-
40 x 32	1.1/2 x 1.1/4	45 X 38	64	0.11	0.17	0.19	0.22	0.22	0.29	0.29	-
		48.3X 33.4		0.11	0.19	0.22	0.24	0.24	0.32	0.32	-
40 x 25	1.1/2 x 1	45 X 32	64	0.10	0.16	0.18	0.20	0.20	0.27	0.27	-
		48.3 X 33.4		0.10	0.17	0.20	0.22	0.22	0.29	0.29	-
40 x 20	1.1/2 x 3/4	45 X 25	64	0.09	0.15	0.1	0.18	0.18	0.24	0.24	-
		48.3 X 26.7		0.10	0.16	-	0.20	0.20	0.26	0.26	-
40 x 15	1.1/2 x 1/2	45 X 18	64	0.08	0.13	0.15	0.16	0.16	0.21	0.21	-
		48.3 X 21.3		0.09	0.15	0.17	0.19	0.19	0.24	0.24	-
50 x 40	2 x 1.1/2	57 X 45	76	0.16	0.26	0.33	0.35	0.35	0.47	0.47	-
		60.3 X 48.3		0.17	0.27	0.35	0.37	0.37	0.51	0.51	-
50 x 32	2 x 1.1/4	57 X 38	76	0.15	0.24	0.30	0.32	0.32	0.44	0.44	-
		60.3 X 42.2		0.16	0.26	0.33	0.35	0.35	0.48	0.48	-
50 x 25	2 x 1	57X 32	76	0.14	0.22	0.27	0.30	0.30	0.41	0.41	-
		60.3 X 33.4		0.14	0.24	0.30	0.32	0.32	0.44	0.44	-
65 x 50	2.1/2 x 2	76 X 57	89	0.30	0.43	0.52	0.70	0.70	0.92	0.92	-
		73.0 X 60.3		0.30	0.43	0.53	0.70	0.70	0.92	0.92	-
65 x 40	2.1/2 x 1.1/2	76 X 45	89	0.28	0.40	0.5	0.64	0.64	0.84	0.84	-
		73.0 X 48.3		0.28	0.40	0.5	0.63	0.63	0.83	0.83	-
65 x 32	2.1/2 x 1.1/4	76 X 38	89	0.26	0.38	0.45	0.60	0.60	0.79	0.79	-
		73.0 X 42.2		0.27	0.38	0.45	0.60	0.60	0.79	0.79	-
65 x 25	2.1/2 x 1	76 X 32	89	0.25	0.36	0.4	0.57	0.57	0.75	0.75	-
		73.0 x 33.4		0.25	0.35	0.4	0.56	0.56	0.73	0.73	-
80 x 65	3 x 2.1/2	89 x 76	89	0.38	0.54	0.72	0.93	0.93	1.26	1.26	-
		88.9 x 73.0		0.37	0.53	0.7	0.91	0.91	1.23	1.23	-
80 x 50	3 x 2	89 x 57	89	0.34	0.48	0.64	0.83	0.83	1.11	1.11	-
		88.9 x 60.3		0.35	0.49	0.65	0.84	0.84	1.13	1.13	-
80 x 40	3 x 1.1/2	89 x 45	89	0.31	0.45	0.6	0.76	0.76	1.02	1.02	-
		88.9 x 48.3		0.32	0.45	0.6	0.78	0.78	1.05	1.05	-





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Normal diameter		mm Outside diameter D <sub>1</sub> X D <sub>2</sub>	Center To end H	Kg/ bcs approx weight							
DN	INCH			sch5s	sch10s	sch20s	STD	sch40	XS	sch80	sch120
90X80	3.1/2 X 3	101.6 X 88.9	102	0.50	0.72	1.09	1.29	1.77	1.77	-	-
90X65	3.1/2 X 2.1/2	101.6 X 73.0	102	0.46	0.66	1.0	1.12	1.12	1.63	1.63	-
90X50	3.1/2 X 2	101.6 X 60.3	102	0.43	0.62	0.95	1.10	1.10	1.51	1.51	-
90X40	3.1/2 X 1.1/2	101.6 X 48.3	102	0.41	0.58	-	1.03	1.03	1.40	1.40	-
100X90	4 X 3.1/2	114.3 X 101.6	102	0.57	0.82	-	1.55	1.55	2.41	2.41	2.38
100X80	4 X 3	108 X 89 114.3 X 88.9	102	0.52 0.54	0.75 0.77	- -	1.41 1.46	1.41 1.46	1.94 2.02	1.94 2.02	2.18 2.24
100X65	4 X 2.1/2	108 X 76 114.3 X 73.0	102	0.49 0.50	0.70 0.72	0.93 0.96	1.32 1.35	1.32 1.35	1.82 1.87	1.82 1.87	2.05 2.1
100X50	4 X 2	108 X 57 114.3 X 60.3	102	0.44 0.48	0.64 0.68	0.85 0.90	1.19 1.27	1.19 1.27	1.64 1.75	1.64 1.75	1.87 1.98
125X100	5 X 4	133 X 108 141.3 X 114.3	127	1.04 1.11	1.27 1.35	1.89 2.01	2.35 2.50	2.35 2.50	3.33 3.55	3.33 3.55	4.31 4.60
125X90	5 X 3.1/2	141.3 X 101.6	127	1.06	1.29	1.92	2.38	2.38	3.38	3.38	4.4
125X80	5 X 3	133 X 89 141.3 X 88.9	127	0.97 1.01	1.18 1.23	1.76 1.83	2.17 2.27	2.17 2.27	3.07 3.22	3.07 3.22	4.0 4.19
125X65	5 X 2.1/2	133 X 76 141.3 X 73.0	127	0.92 0.95	1.12 1.16	1.67 1.72	2.06 2.14	2.06 2.14	2.91 3.02	2.91 3.02	3.8 3.98
150X125	6 X 5	159 X 133 168.3 X 141.3	140	1.40 1.48	1.71 1.81	2.54 2.67	3.42 3.64	3.42 3.64	5.14 5.47	5.14 5.47	6.52 6.95
150X100	6 X 4	159 X 108 168.3 X 114.3	140	1.29 1.37	1.58 1.67	2.35 2.48	3.15 3.36	3.15 3.36	4.72 5.03	4.72 5.03	5.97 6.38
150X90	6 X 3.1/2	168.3 X 101.6	140	1.32	1.61	2.39	3.23	3.23	4.83	4.83	6.08
150X80	6 X 3	159 X 89 168.3 X 88.9	140	1.21 1.26	1.48 1.53	2.20 2.27	2.96 3.87	2.96 3.87	4.41 4.58	4.41 4.58	5.64 5.85
200X150	8 X 6	219 X 159 219.1 X 168.3	152	2.00 2.04	2.70 2.75	4.30 4.38	5.65 5.77	5.65 5.77	8.55 8.73	8.55 8.73	11.9 12.2
200X125	8 X 5	219 X 133 219.1 X 141.3	152	1.90 1.93	2.56 2.60	4.07 4.14	5.35 5.44	5.35 5.44	8.09 8.23	8.09 8.23	11.2 11.4
200X100	8 X 4	219 X 108 219.1 X 114.3	152	1.80 1.83	2.43 2.46	3.86 3.92	5.07 5.14	5.07 5.44	7.64 7.75	7.64 7.75	10.6 10.7
250X200	10 X 8	273 X 219	178	3.72	4.56	6.75	9.74	15.5	15.5	15.5	21.4
250X150	10 X 6	273 X 159 273.1 X 168.3	178	3.38 3.43	4.15 4.21	6.59 6.69	8.83 8.96	14.0 14.2	14.0 14.2	14.0 14.2	19.2 19.5
250 X 125	10 X 5	273 X 133 273.1 X 141.3	178	3.25 3.29	3.99 4.04	6.34 6.42	8.47 8.59	13.4 13.6	13.4 13.6	13.4 13.6	18.4 18.6



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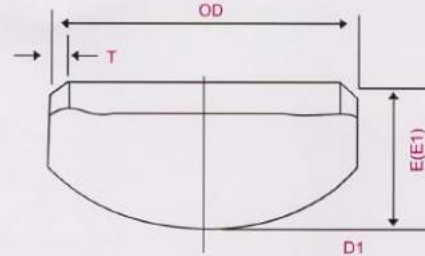


Normal diameter		mm Outside diameter D <sub>1</sub> X D <sub>2</sub>	Center To end H	Kg/ bcs approx weight							
DN	INCH			sch5s	sch10s	sch20s	STD	sch40	XS	sch80	sch120
300X250	12 X 10	325 X 273	203	5.98	6.89	9.38	13.9	15.0	18.3	24.8	35.1
		323.9 X 273.1		5.97	6.88	9.36	13.9	15.0	18.3	24.8	35.0
300X200	12 X 8	325 X 219	203	5.57	6.42	8.73	12.9	14.0	17.0	23.0	32.4
		323.9 X 219.1		5.56	6.41	8.70	12.9	13.9	17.0	23.0	32.3
300X150	12 X 6	325 X 159	203	5.17	5.95	8.10	12.0	12.9	15.7	21.2	29.6
		323.9 X 168.3		5.22	6.00	8.14	12.1	13.0	15.9	21.4	30.0
350X300	14 X 12	377 X 325	330	11.4	13.7	22.2	26.6	30.9	35.1	51.6	73.3
		356.6 X 323.9		11.0	13.2	21.4	25.6	29.8	33.8	49.8	70.6
350X250	14 X 10	377 X 273	330	10.6	12.8	20.7	24.8	28.8	32.7	48.0	68.0
		355.6 X 273.1		10.2	12.3	19.9	23.8	27.7	31.4	46.1	65.3
350X200	14 X 8	377 X 219	330	9.89	11.9	19.2	23.0	26.7	30.3	44.5	62.8
		355.6 X 219.1		9.46	11.4	18.4	22.0	25.5	29.0	42.5	59.9
350X150	14 X 6	377 X 159	330	9.63	11.0	17.75	21.1	24.5	27.8	40.7	57.3
		355.6 X 168.3		9.22	10.5	16.95	20.2	23.5	26.6	38.9	54.7
400X350	16 X 14	426 X 377	356	14.9	16.9	27.4	32.9	43.5	43.5	71.7	101
		406.4 X 355.6		14.1	16.1	26.0	31.2	41.2	41.2	67.9	95.4
400X300	16 X 12	426 X 325	356	14.0	16.0	25.9	31.0	40.9	40.9	67.4	94.7
		406.4 X 323.9		13.6	15.4	25.0	29.9	39.5	39.5	65.1	91.3
400X250	16 X 10	426 X 273	356	13.2	15.0	24.3	29.1	38.4	38.4	63.1	88.5
		406.4 X 273.1		12.7	14.5	23.5	28.1	37.1	37.1	60.9	85.3
400X200	16 X 8	426 X 219	356	12.4	14.1	22.8	27.3	36.0	36.0	59.1	82.6
		406.4 X 219.1		11.9	13.6	21.9	26.2	34.6	34.6	56.7	79.2
400X150	16 X 6	426 X 159	356	11.5	13.1	21.18	25.3	33.3	33.3	54.5	75.9
		406.4 X 168.3		9.96	12.7	20.45	24.5	32.3	32.3	52.7	73.4
450X400	18 X 16	478 X 426	381	17.9	20.4	33.1	39.7	58.8	52.6	96.1	137
		457 X 406.4		17.1	19.5	31.06	37.9	56.1	50.1	91.6	131
450X350	18 X 14	478 X 377	381	17.1	19.4	31.5	37.7	55.8	49.9	91.1	130
		457 X 355.6		16.2	18.5	29.9	35.8	53.0	47.4	86.3	123
450X300	18 X 12	478 X 325	381	16.2	18.5	29.9	35.8	53.0	47.4	86.3	123
		457 X 323.9		15.7	17.9	28.9	34.7	51.2	45.8	83.4	119
450X250	18 X 10	478 X 273	381	15.4	17.6	28.4	34.1	50.3	45.0	81.8	116
		457 X 273.1		14.8	16.9	27.3	32.8	48.4	43.3	78.6	112
450X200	18 X 8	478 X 219	381	14.5	16.5	26.7	32.0	47.3	42.3	76.7	109
		457 X 219.1		14.0	15.9	25.7	30.8	45.5	40.7	73.7	104
500X450	20 X 18	529 X 478	508	30.4	35.2	59.1	59.1	92.5	78.2	156	223
		508 X 457		29.1	33.7	56.6	56.6	88.6	74.9	150	213
500X400	20 X 16	529 X 426	508	28.9	33.4	56.2	56.2	87.9	74.4	149	211
		508 X 406.4		27.7	32.0	53.8	53.8	84.1	71.1	142	201
500X350	20 X 14	529 X 377	508	27.6	31.9	53.6	53.6	83.8	70.9	142	200
		508 X 355.6		36.3	30.4	51.0	51.0	79.7	67.4	135	190
500X300	20 X 12	529 X 325	508	26.2	30.3	50.8	50.8	79.4	67.2	134	189
		508 X 323.9		25.4	29.4	49.3	49.3	77.0	65.1	130	183



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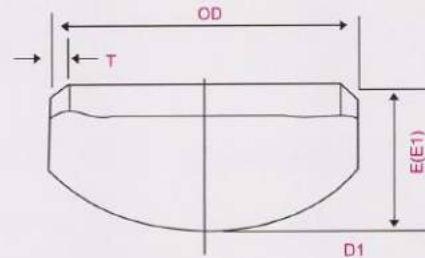


Nominal Diameter		Outside Diameter	Back to end		Kg / pcs approx weight								
DN	INCH	CD	E	E1	sch5s	sch10s	sch20s	sch20s	STD	sch40s	XS	sch80s	sch120s
15	1/2	18 21.3	25	-	0.019 0.022	0.024 0.028	0.027 0.033	-	0.031 0.037	0.031 0.037	0.042 0.050	0.042 0.050	0.057 0.063
20	3/4	25 26.7	25	-	0.027 0.029	0.033 0.035	0.038 0.041	-	0.045 0.048	0.045 0.048	0.060 0.065	0.060 0.065	0.079 0.086
25	1	32 33.7	38	-	0.049 0.052	0.083 0.087	0.091 0.093	-	0.101 0.106	0.101 0.106	0.136 0.143	0.136 0.143	0.176 0.182
32	1.1/4	38 42.4	38	-	0.058 0.065	0.099 0.110	0.111 0.125	-	0.126 0.141	0.126 0.141	0.173 0.193	0.173 0.193	0.213 0.237
40	1.1/2	45 48.3	38	-	0.071 0.076	0.118 0.127	0.138 0.148	-	0.158 0.169	0.158 0.169	0.218 0.234	0.218 0.234	0.294 0.323
50	2	57 60.3	38	44	0.094 0.099	0.156 0.165	0.189 0.200	-	0.221 0.234	0.221 0.234	0.313 0.331	0.313 0.331	0.387 0.426
65	2.2/1	76 73.0	38	51	0.167 0.161	0.241 0.232	0.391 0.312	-	0.409 0.393	0.409 0.393	0.555 0.534	0.555 0.534	0.676 0.634
80	3	89	51	64	0.254	0.367	0.490	-	0.660	0.660	0.917	0.917	1.469
90	3.1/2	101.6	64	76	0.355	0.512	0.739	-	0.965	0.965	1.36	1.36	1.891
100	4	108 114.3	65	76	0.387 0.410	0.561 0.594	0.810 0.822	-	1.11 1.17	1.11 1.17	1.58 1.67	1.58 1.67	2.04 2.16
125	5	133 139.7 141.3	76	89	0.769 0.808 0.817	0.945 0.993 1.00	1.339 1.421 1.473	-	1.82 1.91 1.93	1.82 1.91 1.93	2.65 2.78 2.81	2.65 2.78 2.81	3.52 3.70 3.74
150	6	159 168.3 165.2	89	102	1.07 1.13 1.13	1.31 1.39 1.36	1.843 2.00 1.97	-	2.74 2.90 2.85	2.74 2.90 2.85	4.22 4.47 4.39	4.22 4.47 4.39	5.50 5.82 5.72
200	8	219 216.1	102	127	1.76 1.74	2.38 2.35	4.03 3.38	4.03 3.38	5.19 5.13	5.19 5.13	8.05 7.95	8.05 7.95	11.6 11.5
250	10	273 267.4	127	152	3.36 3.29	4.14 4.05	6.27 6.14	6.27 6.14	9.15 8.96	9.15 8.96	12.5 12.2	16.8 16.4	23.9 23.4



# C.V. METAL CORPORATION

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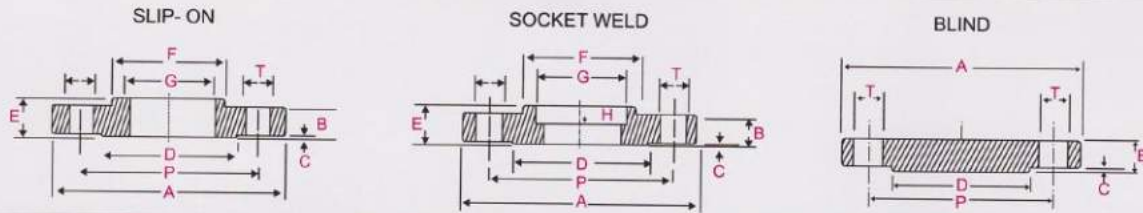


Nominal Diameter		Outside Diameter	Center to end		Kg / pcs approx weight							
DN	INCH	OD	F	B	sch5s	sch10s	sch20s	sch20s	STD	sch40s	XS	sch120s
300	12	325	152	178	5.12	6.40	9.90	13.5	14.6	17.9	28.3	94.0
		323			5.11	6.39	9.43	13.3	14.4	17.7	27.1	91.0
		318.5			5.02	6.27	9.40	13.2	14.2	17.3	26.8	90.5
350	14	377	165	191	6.00	8.46	14.0	16.9	19.9	22.5	38.5	105
		355.6			5.66	7.98	13.2	15.9	18.8	21.2	35.2	99.0
400	16	426	178	203	6.93	7.91	17.4	21.0	28.2	28.0	52.0	116
		406.4			6.60	7.53	12.5	20.0	26.7	26.7	49.1	111
450	18	478	203	229	7.90	9.01	22.3	26.9	43.8	35.8	76.1	131
		457.2			7.52	8.58	21.2	25.6	41.4	34.1	69.1	125
500	20	529	229	254	10.5	12.02	33.2	33.2	57.6	44.2	103	141
		508.0			10.1	11.7	31.9	31.9	54.0	42.5	93.7	136
550	22	559	254	-	12.1	22.6	38.8	38.8	78.3	51.7	116	168
600	24	630	267	305	14.8	16.9	47.4	46.5	92.3	61.9	177	172
		610			14.3	16.4	45.1	45.1	90.1	60.1	160	164
650	26	660	267	-	23.3	26.1	67.3	5.05	103.5	67.3	-	-
700	28	720	267	-	27.1	32.4	75.9	59.9	151.1	75.6	-	-
		711			38.7	49.7	94.9	56.2	121.3	74.9	-	-
750	30	762	267	-	41.4	51.7	82.8	62.1	117.3	82.8	-	-
800	32	820	267	-	43.4	58.3	92.0	70.6	127	92.0	-	-
		830			43.1	57.7	91.2	70.0	126	91.0	-	-
850	34	864	267	-	57.2	68.5	105	78.7	144	105	-	-
900	36	920	267	-	60.3	74.6	115	86.3	172	115	-	-
		914			59.1	72.1	114	85.7	171	114	-	-



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## DIMENSIONS OF CLASS 150 FLANGES AS PER ANSI B 16.5

N.B.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	T	No of Holes
15	89	11.1	1.6	35	16	30	22.4	9.5	21.3	-	48	16	16	23.0	60.3	3.0	15.9	4
20	98	12.7	1.6	43	16	38	27.7	11.0	26.7	-	52	16	16	28.0	69.8	3.0	15.9	4
25	108	14.3	1.6	51	17	49	34.5	12.5	33.4	-	56	17	17	35.0	79.4	3.0	15.9	4
32	117	15.9	1.6	64	21	59	43.2	14.5	42.2	-	57	21	21	43.5	88.9	5.0	15.9	4
40	127	17.5	1.6	73	22	65	49.5	16.0	48.3	-	62	22	22	50.0	98.4	6.5	15.9	4
50	152	19.0	1.6	92	25	78	62.0	17.5	60.3	-	64	25	25	62.5	120.6	8.0	19.0	4
65	178	22.2	1.6	105	29	90	74.7	19.0	73.0	-	70	29	29	75.5	139.7	8.0	19.0	4
80	190	23.8	1.6	127	30	108	90.7	20.5	88.9	-	70	30	30	91.5	152.4	9.5	19.0	4
90	216	23.8	1.6	140	32	122	103.4	-	101.6	-	71	32	32	104.0	177.8	9.5	19.0	8
100	229	23.8	1.6	157	33	135	116.1	-	114.3	-	76	33	33	117.0	190.5	11.0	19.0	8
125	254	23.8	1.6	186	37	164	143.8	-	141.3	-	89	37	37	145.0	215.9	11.0	22.2	8
150	279	25.4	1.6	216	40	192	170.7	-	168.3	-	89	40	40	171.0	241.3	12.5	22.2	8
200	343	28.6	1.6	270	44	246	221.5	-	219.1	-	102	44	44	222.0	293.4	12.5	22.2	8
250	406	30.2	1.6	324	49	305	276.4	-	273.0	-	102	49	49	277.0	362.0	12.5	25.4	12
300	483	31.8	1.6	381	56	365	327.2	-	323.9	-	114	56	56	328.0	431.8	12.5	25.4	12
350	533	34.9	1.6	413	57	400	359.2	-	355.6	-	127	57	79	360.0	476.2	12.5	28.6	12
400	597	36.5	1.6	470	64	457	410.5	-	406.4	-	127	64	87	411.0	539.8	12.5	28.6	16
450	635	39.7	1.6	533	68	505	461.8	-	457.2	-	140	68	97	462.0	577.8	12.5	31.8	16
500	698	42.9	1.6	584	73	559	513.1	-	508.0	-	144	73	103	514.0	635.0	12.5	31.8	20
600	813	47.6	1.6	692	83	664	616.0	-	609.6	-	152	83	111	616.0	749.3	12.5	34.9	20

## DIMENSIONS OF CLASS 300 FLANGES AS PER ANSI B 16.5

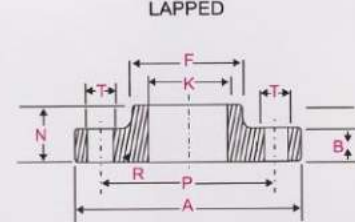
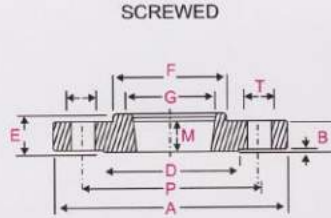
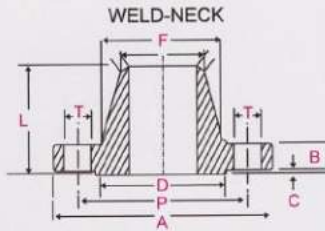
N.B.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	T	No of Holes
15	95	14.3	1.6	35	22	38	22.4	9.5	21.3	23.5	52	16	22	23.0	66.7	3.0	15.9	4
20	117	15.9	1.6	43	25	48	27.7	11.0	26.7	29.0	57	16	25	28.0	82.6	3.0	19.0	4
25	124	17.5	1.6	51	27	54	34.5	12.5	33.4	36.0	62	17	27	35.0	88.9	3.0	19.0	4
32	133	19.0	1.6	64	27	64	43.2	14.5	42.2	44.5	65	21	27	43.5	98.4	5.0	19.0	4
40	156	20.6	1.6	73	30	70	49.5	16.0	48.3	50.5	68	22	30	50.0	114.3	6.5	22.2	4
50	165	22.2	1.6	92	33	84	62.0	17.5	60.3	63.5	70	29	33	62.5	127.0	8.0	19.0	8
65	190	25.4	1.6	105	38	100	74.7	19.0	73.0	76.0	76	32	38	75.5	149.2	8.0	22.2	8
80	210	28.6	1.6	127	43	117	90.7	20.5	88.9	92.0	79	32	43	91.5	168.3	9.5	22.2	8
90	229	30.2	1.6	140	44	133	103.4	-	101.6	105.0	81	37	44	104.0	184.2	9.5	22.2	8
100	254	31.8	1.6	157	48	146	116.1	-	114.3	118.0	86	37	48	117.0	200.0	11.0	22.2	8
125	279	34.9	1.6	186	51	178	143.8	-	141.3	145.0	98	43	51	145.0	235.0	11.0	22.2	8
150	318	36.5	1.6	216	52	206	170.7	-	168.3	171.0	98	46	52	171.0	269.9	12.5	22.2	12
200	381	41.3	1.6	270	62	260	221.5	-	219.1	222.0	111	51	62	222.0	330.2	12.5	25.4	12
250	444	47.6	1.6	324	67	321	276.4	-	273.0	276.0	117	56	95	277.0	387.4	12.5	28.6	16
300	521	50.8	1.6	381	73	375	327.2	-	323.9	329.0	130	60	102	328.0	450.8	12.5	31.8	16
350	584	54.0	1.6	413	76	425	359.2	-	355.6	360.0	143	64	111	360.0	514.4	12.5	31.8	20
400	648	57.2	1.6	470	83	483	410.5	-	406.4	411.0	146	68	121	411.0	571.5	12.5	34.9	20
450	711	60.3	1.6	533	89	533	461.8	-	457.2	462.0	159	70	130	462.0	628.6	12.5	34.9	24
500	775	63.5	1.6	584	95	587	513.1	-	508.0	513.0	162	73	140	514.0	685.8	12.5	34.9	24
600	914	69.8	1.6	692	106	702	616.0	-	609.6	614.0	168	82	152	616.0	812.8	12.5	41.3	24

- All dimension are in Millimeters
- Flanges except Lap Joint will be furnished with (1.6) Raised, Face which is included in "Thickness(c)" and "Length through Hub(Y)"



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## DIMENSIONS OF CLASS 600 FLANGES AS PER ANSI B 16.5

N.B.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	T	No of Holes
15	95	14.3	6.4	35	22	38	22.4	9.5	21.3	23.5	52	16	22	23.0	66.7	3.0	15.9	4
20	117	15.9	6.4	43	25	48	27.7	11.0	26.7	29.0	57	16	25	28.0	82.6	3.0	19.0	4
25	124	17.5	6.4	51	27	54	34.5	12.5	33.4	36.0	62	17	27	35.0	88.9	3.0	19.0	4
32	133	20.6	6.4	64	29	64	43.2	14.5	42.2	44.5	67	21	29	43.5	98.4	5.0	19.0	4
40	156	22.2	6.4	73	32	70	49.5	16.0	48.3	50.5	70	22	32	50.0	114.3	6.5	22.2	4
50	165	25.4	6.4	92	37	84	62.0	17.5	60.3	63.5	73	29	37	62.5	127.0	8.0	19.0	8
65	190	28.6	6.4	105	41	100	74.7	19.0	73.0	76.0	79	32	41	75.5	149.2	8.0	22.2	8
80	210	31.8	6.4	127	46	117	90.7	20.5	88.9	92.0	83	35	46	91.5	168.3	9.5	22.2	8
90	229	34.9	6.4	140	49	133	103.4	-	101.6	105.0	86	40	49	104.0	184.2	9.5	25.4	8
100	273	38.1	6.4	157	54	152	116.1	-	114.3	118.0	102	41	54	117.0	215.9	11.0	25.4	8
125	330	44.4	6.4	186	60	189	143.8	-	141.3	145.0	114	48	60	145.0	266.7	11.0	28.6	8
150	356	47.6	6.4	216	67	222	170.7	-	168.3	171.0	117	51	67	171.0	292.1	12.5	28.6	12
200	419	55.6	6.4	270	76	273	221.5	-	219.1	222.0	133	57	76	222.0	349.2	12.5	31.8	12
250	508	63.5	6.4	324	86	343	276.4	-	273.0	276.0	152	65	111	277.0	431.8	12.5	34.9	16
300	559	66.7	6.4	381	92	400	327.2	-	323.9	329.0	156	70	117	328.0	489.0	12.5	34.9	20
350	603	69.8	6.4	413	94	432	359.2	-	355.6	360.0	165	73	127	360.0	527.0	12.5	38.1	20
400	686	76.2	6.4	470	106	495	410.5	-	406.4	411.0	178	78	140	411.0	603.2	12.5	41.3	20
450	743	82.6	6.4	533	117	546	461.8	-	457.2	462.0	184	79	152	462.0	654.0	12.5	44.4	20
500	813	88.9	6.4	584	122	610	513.1	-	508.0	513.0	192	83	165	514.0	723.9	12.5	44.4	24
600	940	101.6	6.4	692	140	718	616.0	-	609.6	614.0	203	92	184	616.0	838.2	12.5	50.8	24

## DIMENSIONS OF CLASS 1500 FLANGES AS PER ANSI B 16.5

N.B.	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P	R	T	No of Holes
15	121	22.2	6.4	35	32	38	22.4	9.5	21.3	23.5	60	22	32	23.0	82.6	3.0	22.2	4
20	130	25.4	6.4	43	35	44	27.7	11.0	26.7	29.0	70	25	35	28.0	88.9	3.0	22.2	4
25	149	28.6	6.4	51	41	52	34.5	12.5	33.4	36.0	73	29	41	35.0	101.6	3.0	25.4	4
32	159	28.6	6.4	64	41	64	43.2	14.5	42.2	44.5	73	30	41	43.5	111.1	5.0	25.4	4
40	178	31.8	6.4	73	44	70	49.5	16.0	48.3	50.5	83	32	44	50.0	123.8	6.5	28.6	4
50	216	38.1	6.4	92	57	105	62.0	17.5	60.3	63.5	102	38	57	62.5	165.1	8.0	25.4	8
65	244	41.3	6.4	105	64	124	74.7	19.0	73.0	76.0	105	48	64	75.5	190.5	8.0	28.6	8
80	267	47.6	6.4	127	73	133	-	-	88.9	92.0	117	51	73	91.5	203.2	9.5	31.8	8
100	311	54.0	6.4	157	91	162	-	-	114.3	118.0	124	57	91	117.0	241.3	11.0	34.9	8
125	325	73.0	6.4	186	105	197	-	-	141.3	145.0	156	64	105	145.0	292.1	11.0	41.3	8
150	394	82.6	6.4	216	119	229	-	-	168.3	171.0	171	70	119	171.0	317.5	12.5	38.1	12
200	483	92.1	6.4	270	123	292	-	-	219.1	222.0	213	75	143	222.0	393.7	12.5	44.4	12
250	584	108.0	6.4	324	159	368	-	-	273.0	276.0	254	84	178	277.0	482.6	12.5	50.8	12
300	673	123.8	6.4	381	181	451	-	-	323.9	329.0	283	92	219	328.0	571.5	12.5	54.0	16
350	749	133.4	6.4	413	-	495	-	-	355.6	-	298	-	241	360.0	635.0	12.5	60.3	16
400	826	146.1	6.4	470	-	552	-	-	406.4	-	311	-	260	411.0	704.8	12.5	66.7	16
450	914	161.9	6.4	533	-	597	-	-	457.2	-	327	-	276	462.0	774.7	12.5	73.0	16
500	984	178.0	6.4	584	-	641	-	-	508.0	-	356	-	292	514.0	831.8	12.5	79.4	16
600	1168	203.0	6.4	692	-	762	-	-	609.6	-	406	-	330	616.0	990.6	12.5	92.0	16

- All dimension are in Millimeters
- Flanges except Lap Joint will be furnished with (1.6) Raised, Face which is included in "Thickness(c)" and "Length through Hub(Y)"



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## DIMENSIONS OF FLANGES AS PER TABLE BS - 10

**TABLE**

For Working Steam Pressure upto 50 lbs per sq. inch

Nominal Pipe Size	O.D. of Pipe	O.D.	P.C.D.	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	95.3	66.7	4	12.7	4.8
3/4"	26.7	101.6	73.0	4	12.7	4.8
1"	33.4	114.3	82.6	4	12.7	4.8
1.1/4"	42.2	120.7	87.3	4	12.7	6.4
1.1/2"	48.2	133.4	98.4	4	12.7	6.4
2"	60.3	152.4	114.3	4	15.9	7.9
2.1/2"	73.0	165.1	127.0	4	15.9	7.9
3"	88.9	184.2	146.1	4	15.9	9.5
3.1/2"	101.6	203.2	165.1	4	15.9	9.5
4"	114.3	215.9	177.8	4	15.9	9.5
5"	141.3	254.0	209.6	8	15.9	12.7
6"	168.3	279.4	228.6	8	15.9	12.7
7"	190.5	304.8	260.4	8	15.9	12.7
8"	219.1	336.6	292.1	8	15.9	12.7
9"	244.5	368.3	323.9	8	15.9	15.9
10"	273.0	406.4	355.6	8	19.1	15.9
12"	323.9	457.2	406.4	12	19.1	15.9
14"	355.6	527.1	469.9	12	22.2	19.1
16"	406.4	577.9	520.7	12	22.2	19.1
18"	457.2	641.4	584.2	12	22.2	22.2
20"	508.0	704.9	641.4	16	22.5	25.4
24"	609.6	825.5	755.7	16	25.4	28.6

**TABLE**

For Working Steam Pressure upto 100 lbs per sq. inch

Nominal Pipe Size	O.D. of Pipe	O.D.	P.C.D.	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	95.3	66.3	4	12.7	6.4
3/4"	26.7	101.6	73.0	4	12.7	6.4
1"	33.4	114.3	82.6	4	12.7	7.1
1.1/4"	42.2	120.7	87.3	4	12.7	7.9
1.1/2"	48.2	133.4	98.4	4	12.7	8.7
2"	60.3	152.4	114.3	4	15.9	9.5
2.1/2"	73.0	165.1	127.0	4	15.9	10.3
3"	88.9	184.2	146.1	4	15.9	11.1
3.1/2"	101.6	203.2	165.1	8	15.9	11.9
4"	114.3	215.9	177.8	8	15.9	12.7
5"	141.3	254.0	209.6	8	15.9	14.3
6"	168.3	279.4	228.6	8	19.1	17.5
7"	190.5	304.8	260.4	8	19.1	19.1
8"	219.1	336.6	292.1	8	19.1	19.1
9"	244.5	368.3	323.9	12	19.1	20.6
10"	273.0	406.4	355.6	12	19.1	22.2
12"	323.9	457.2	406.4	12	22.2	25.4
14"	355.6	527.1	469.9	12	22.2	25.4
16"	406.4	577.9	520.7	12	22.2	25.4
18"	457.2	641.4	584.2	16	22.2	28.6
20"	508.0	704.9	647.4	16	22.5	31.8
24"	609.6	825.9	755.7	16	25.4	38.1

**TABLE**

For Working Steam Pressure above 100 lbs & upto 150 lbs per sq. inch

Nominal Pipe Size	O.D. of Pipe	O.D.	P.C.D.	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	95.3	66.7	4	12.7	9.5
3/4"	26.7	101.6	73.0	4	12.7	9.5
1"	33.4	120.7	87.3	4	15.9	9.5
1.1/4"	42.2	133.4	98.4	4	15.9	12.7
1.1/2"	48.2	139.7	104.8	4	15.9	12.7
2"	60.3	165.1	127.0	4	15.9	15.9
2.1/2"	73.0	184.2	146.1	8	15.9	15.9
3"	88.9	203.2	165.1	8	15.9	15.9
3.1/2"	101.6	215.9	177.8	8	15.9	19.1
4"	114.3	228.6	190.5	8	15.9	19.1
5"	141.3	279.4	235.0	8	19.1	22.2
6"	168.3	304.8	260.4	12	19.1	22.2
7"	190.5	336.6	292.1	12	19.1	22.2
8"	219.1	368.3	323.9	12	19.1	25.4
9"	244.5	406.4	355.6	12	22.2	25.4
10"	273.0	431.8	381.0	12	22.2	25.4
12"	323.9	489.0	438.2	16	22.2	28.6
14"	355.6	552.5	495.3	16	25.4	31.8
16"	406.4	609.6	552.5	20	25.4	31.8
18"	457.2	673.1	609.6	20	28.6	34.9
20"	508.0	736.6	673.1	24	28.6	38.1
24"	609.6	850.9	781.1	24	31.8	41.3

**TABLE**

For Working Steam Pressure above 150 lbs & upto 250 lbs per sq. inch

Nominal Pipe Size	O.D. of Pipe	O.D.	P.C.D.	No. of Bolt	Dia of Bolt	Thickness
1/2"	21.3	114.3	82.6	4	15.9	12.7
3/4"	26.7	114.3	82.6	4	15.9	12.7
1"	33.4	120.7	87.3	4	15.9	14.3
1.1/4"	42.2	133.4	98.4	4	15.9	17.5
1.1/2"	48.2	139.7	104.8	4	15.9	17.5
2"	60.3	165.1	127.0	4	15.9	19.1
2.1/2"	73.0	184.2	146.1	8	15.9	19.1
3"	88.9	203.2	165.1	8	15.9	22.2
3.1/2"	101.6	215.9	177.8	8	15.9	22.2
4"	114.3	228.6	190.5	8	15.9	25.4
5"	141.3	279.4	235.0	8	19.1	28.6
6"	168.3	304.8	260.4	12	19.1	28.6
7"	190.5	336.6	292.1	12	19.1	31.8
8"	219.1	368.3	323.9	12	19.1	31.8
9"	244.5	406.4	355.6	12	22.2	34.9
10"	273.0	431.8	381.0	12	22.2	34.9
12"	323.9	489.0	438.2	16	22.2	38.1
14"	355.6	552.5	495.3	16	25.4	41.3
16"	406.4	609.6	552.5	20	25.4	44.5
18"	457.2	673.1	609.6	20	28.6	47.6
20"	508.0	736.6	673.1	24	28.6	50.8
24"	609.6	850.9	781.1	24	31.8	57.2

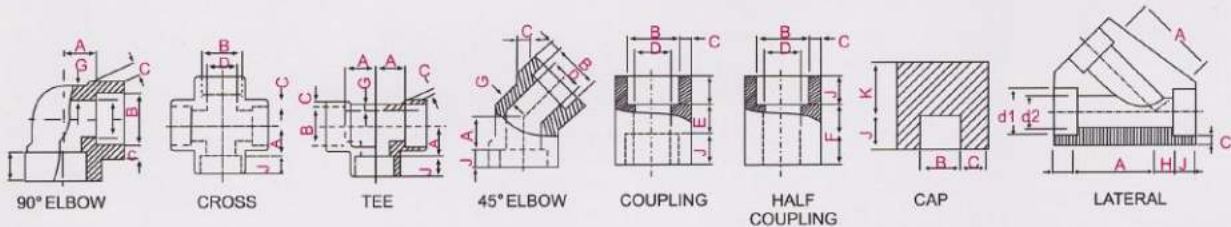
**Note :** For 12.7 mm & 15.87mm Bolts Dia the diameters of the holes will be 1.58 mm larger and for 19.01 and above the Hole Dia will be 3.17 larger.



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NOM Pipe Size	Depth of Socket Min-J	Center To Bottom of Socket						Laying Lengths		End Wall Thickness K min			Center to Bottom of Socket 45 Lateral			
		90 Elbows, Tees, and Crosses			45 Elbows			Couplings E	Half Couplings F	Class Designation			A		H	
		Class Designation			Class Designation								3000		6000	
		3000	6000	9000	3000	6000	9000	sch80	sch160	sch80	sch160	sch80	sch160			
1/8	10	12	12	-	9	9	-	8	17	5.0	6.5	-	-	-	-	-
		10	10	-	7	7	-	5	15	-	-	-	-	-	-	-
1/4	10	12	17	-	9	9	-	8	17	5.0	6.5	-	32	-	8	-
		10	13	-	7	7	-	5	15	-	-	-	-	-	-	-
3/8	10	15	17	-	9	13	-	9	19	5.0	6.5	-	37	-	8	-
		12	14	-	6	10	-	6	16	-	-	-	-	-	-	-
1/2	10	17	21	27	13	14	17	13	24	6.5	8.0	11.0	41	51	11	13
		14	18	24	10	11	14	6	21	-	-	-	-	-	-	-
3/4	13	21	24	30	14	16	21	13	25	6.5	8.0	12.5	51	60	13	14
		18	21	27	11	13	17	6	22	-	-	-	-	-	-	-
1	13	24	29	34	16	19	23	17	31	9.5	11.0	14.0	60	71	14	18
		20	25	30	12	15	19	9	27	-	-	-	-	-	-	-
1 1/4	13	29	34	37	19	23	24	17	32	9.5	11.0	14.0	71	81	18	21
		25	30	33	15	19	20	9	28	-	-	-	-	-	-	-
1 1/2	13	34	40	40	23	27	28	17	34	11.0	12.5	16.0	81	98	21	25
		30	36	36	19	23	23	9	30	-	-	-	-	-	-	-
2	16	40	43	56	27	31	31	23	43	12.5	16.0	19.0	98	120	25	29
		36	39	52	23	27	26	15	39	-	-	-	-	-	-	-
2 1/2	16	44	-	-	31	-	-	24	45	16.0	19.0	-	-	-	-	-
		39	-	-	27	-	-	14	40	-	-	-	-	-	-	-
3	16	60	-	-	34	-	-	24	47	19.0	22.0	-	-	-	-	-
		55	-	-	29	-	-	14	42	-	-	-	-	-	-	-
4	1	69	-	-	44	-	-	24	50	22.0	28.5	-	-	-	-	-
		64	-	-	39	-	-	14	45	-	-	-	-	-	-	-



**Note :-**

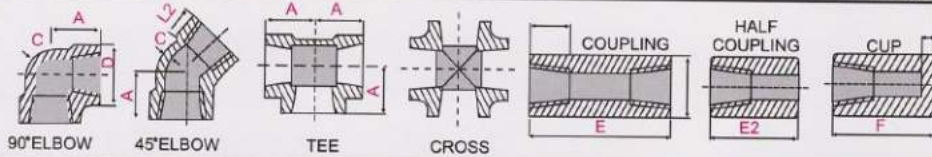
- 1) Average of Socket Wall Thickness around periphery shall be no less than listed values .  
The minimum values are permitted in localized areas.
- 2) Upper and lower values for each size are the respective maximum dimensions.



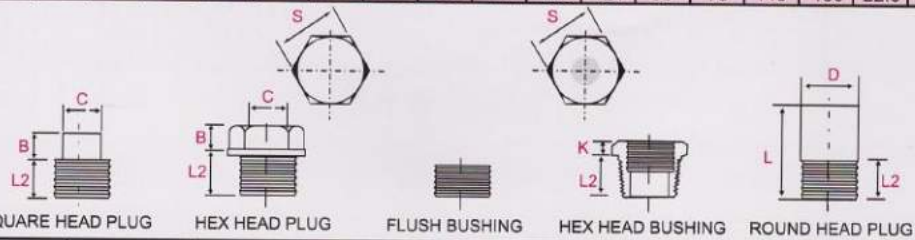


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Normal Pipe Size DN		90° Elbow, 45° Elbow, Tee, Cross												Half Coupling, Coupling, Cup						Length of Thread		
		Center to End						Outside Diameter			Wall Thickness			End To End		Outside Diameter		End Wall Thickness				
		A						D			C			E	F	D		C				
		90° Elbow, Tee, Cross			45° Elbow																	
A	B(in)	2000	3000	6000	2000	3000	6000	2000	3000	6000	2000	3000	6000	3000, 6000	3000	6000	300	6000	3000	6000	B	L12
6	1/8	21	21	25	17	17	19	22	22	25	3.0	3.0	6.5	32	19	-	16	22	5.0	-	6.5	6.5
8	1/4	21	25	29	17	19	22	22	25	33	3.0	3.5	6.5	35	25	27	19	25	5.0	6.5	8.0	10.0
10	3/8	25	29	33	19	22	25	25	33	38	3.0	3.5	7.0	38	25	27	22	32	5.0	6.5	9.0	10.5
15	1/2	29	33	38	22	25	29	33	38	46	3.0	4.0	8.0	48	32	33	29	38	6.5	8.0	11.0	13.5
20	3/4	33	38	44	25	29	33	38	46	56	3.0	4.5	8.5	51	37	38	35	44	6.5	8.0	12.5	14.0
25	1	38	44	51	29	33	35	46	56	62	3.5	5.0	10.0	60	41	43	44	57	9.5	11.0	14.5	17.5
32	1 1/4	44	51	60	33	35	43	56	62	75	4.0	5.5	10.5	67	44	46	57	64	9.5	11.0	17.0	18.0
40	1 1/2	51	60	64	35	43	44	62	75	84	4.0	5.5	11.0	79	44	48	64	76	11.0	12.5	18.0	18.5
50	2	60	64	83	43	45	52	75	84	102	4.5	7.0	12.0	86	48	51	76	92	12.5	16.0	19.0	19.0
65	2 1/2	76	83	95	52	52	64	92	102	121	5.5	7.5	15.5	92	60	64	92	108	16.0	19.0	23.5	29.0
80	3	86	96	106	64	64	79	110	121	146	6.0	9.0	16.5	108	65	68	108	127	19.0	22.0	26.0	30.5
100	4	106	114	114	79	79	79	146	152	152	6.5	11.0	18.5	121	68	75	140	159	22.0	28.5	27.5	33.0

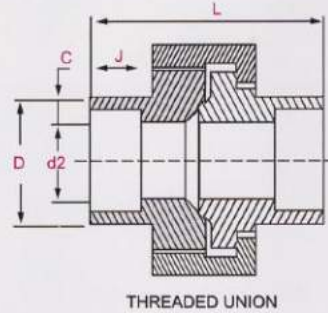
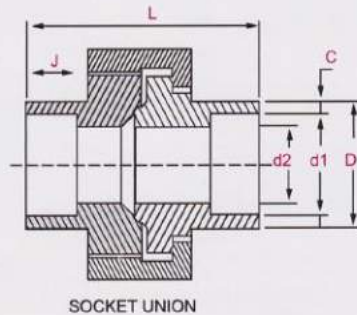


Normal Pipe Size DN		Length Of Thread	Square Head Plugs		Round Head Plugs		Hex Head Plugs		
			Hight of Square	Width of Flats	Diameter of Round Head	End to End	Width of Flats	Hex Height	
A	B(in)	B2min	Bmin	Bmin	D	Lmin	S	Kmin	Hmin
6	1/8	9.5	6	7.0	10	35	11.0	-	6
8	1/4	11.0	6	9.5	13	41	16.0	3	6
10	3/8	12.5	8	11.0	17	41	17.5	4	8
15	1/2	14.5	10	14.5	21	44	22.0	5	8
20	3/4	16.0	11	16.0	27	44	27.0	6	10
25	1	19.0	13	20.5	33	51	35.0	6	10
32	1 1/4	20.5	14	24.5	43	51	44.5	7	14
40	1 1/2	20.5	16	28.5	48	51	51.0	8	16
50	2	22.0	17	33.5	60	64	63.5	9	17
65	2 1/2	27.0	19	38.0	73	70	76.0	10	19
80	3	28.5	21	43.0	89	70	89.0	10	21
100	4	32.0	25	63.5	114	76	117.5	13	25



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Normal Pipe Size DN		Outside Diameter		Wall		Socket Bore	Water Way Bore	Depth of Socket	Length Assem Nominal
		D	C	D1	D2	J	L		
A	B (in)	Socket	Threaded	Socket	Threaded	Socket	Socket & Threaded	Socket	Socket & Threaded
6	1/8	21.8	14.7	3.2	2.5	10.65	6.43	10	41.4
8	1/4	21.8	19.0	3.3	3.1	14.10	9.45	10	41.4
10	3/8	25.9	22.9	3.5	3.2	17.55	13.51	10	46.0
15	1/2	31.2	27.7	4.1	3.8	21.70	17.07	10	49.0
20	3/4	37.1	33.5	4.3	4.0	27.05	21.39	13	56.9
25	1	45.5	41.4	5.0	4.6	33.80	27.74	13	62.0
32	1/4	54.9	50.5	5.3	4.9	42.55	35.36	13	71.1
40	1 1/2	61.5	57.2	5.6	5.1	48.65	41.20	13	76.5
50	2	75.2	70.1	6.1	5.6	61.10	52.12	16	86.1
65	2 1/2	91.7	85.3	7.7	7.1	73.80	64.31	16	102.4
80	3	109.2	102.4	8.4	7.7	89.80	77.27	16	109.0



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**Dam Project**

**Pump Project**

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**Chemicals Plant**

**Cement plant**

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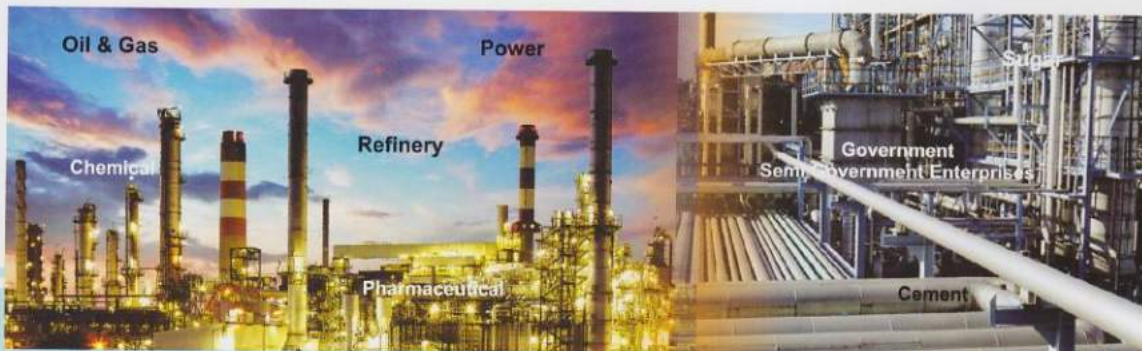
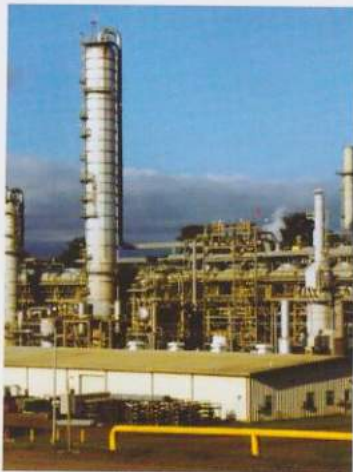
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